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PLANNING THE WEIGHTLIFTERS TRAINING PROCESS AT THE INITIAL STAGE

Specialty 533.04 – Physical education, sports, kinetotherapy and recreation

Summary

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DOCTORATE COMMITTEE FOR PUBLIC DEFENSE

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CONCEPTUAL GUIDELINES OF THE RESEARCH

Actuality and importance of the problem addressed. Planning the training process in Olympic sports is one of the main concerns of specialists in the field. Currently, performance sport is constantly changing the views of specialists regarding the training process at all stages of preparation. Weightlifting also involves a new ranking of goals, to build a highly effective training process. One of such objectives is certainly the system of planning the training process, the programmed form aiming the quality and responsibility on which the entire system of training athletes must be supported.

Centralized weightlifters training (by the way, as in all Olympic sports events) is divided into four important stages, including: the early (initial) training stage; the stage of specialization and sports selection; the stage of perfecting sportsmanship, where the increase in the degree of complexity of the training programs is foreseen; the stage of superior sports mastery provided for the achievement of high results [1, 4, 10, 52, 61].

Obviously, each of the mentioned stages requires certain specific activity approaches in order to effectively achieve the strategic objectives of the training process.

The training practice in the weightlifting event proves that the age at which the athlete's sports training begins has recently dropped below 10 years. It should be noted that in accordance with the provisions of international regulations from the last period, sportsmen and women are allowed to participate in various competitions under the age of 16, (participation in the competition and awarding of master sports categories: boys and girls starts at 13 years old) . Certainly, for the participation in such contests, a prior period of preparation is necessary, which is identified by the specialists of the field as an early (initial) period of training [5, 18, 28, 43]. That is why the early training period is of great interest for the training of prospective athletes, based on the training process with the most relevant forms of activity under the auspices of one of the most advantageous planning.

On the basis of the correct and detailed design/planning of the training process, namely at the initial stage of training of young athletes, taking into account all the particularities specific to the age, the stage and the specifics of sports training, action scenarios can be established to prolong the modernized way of preparing for the subsequent stages of training, until reaching the highest results.

Thus, the establishment of an integral planning system of the most representative forms of training for the period of incipient sportsmanship of young weightlifters and actions based on symmetrical training systems, all included in a macrocycle of two years of training, constitutes the ***primary interest*** of the present research.

In the continuation of the description of these desired, it should be mentioned that currently, in weightlifting, new changes and updates are required in the contents of the training programs of both the athletes and the coaches (technical staff).

Thus, **new training direction** of athletes in weightlifting event, at the present time, is determined by the ability to withstand the demands that intensify more and more in order to strengthen the body and adjust it to the classic specifics of lifting weights: pulled and thrown.

The purpose of research lies in the modernization of the planning forms of the beginner weightlifters training process in accordance with the specifics of the symmetrical systems of performing exercises.

Research objectives. In order to achieve the goal, the following objectives were determined:

1. Study on theoretical-scientific approaches regarding the role of planning forms of the training process in weightlifting.
2. Development of the experimental methodology for planning the weightlifters training process at the initial stage based on symmetrical training systems.
3. The practical application of the developed experimental methodology to the training process: determining the efficiency of planning forms - in the structure of a two-year training macrocycle.
4. Argumentation of the experimental program regarding the correlation of the results obtained on the basis of the forms of planning based on the symmetrical exercise systems in the training process with weightlifters at the initial stage.

Research hypothesis implies the possibility of improving the results that weightlifters can achieve at the initial stage of training due to a correct approach to performing exercises, starting from the first training lessons. Such approaches refer to the application of symmetrical training systems, which can establish from the start a correct, proportional and balanced physical development of the athlete's body, because precisely the proportional development can provide safety during the motor process of weight lifting and for fixing the barbell above the head.

Synthesis of the methodology research and justification **methods** applied:

- *theoretical-conceptual analysis* of the training process with athletes in the "Weightlifting" event: (currently, the specialized scientific literature does not fully state the effectiveness of specific approaches to training athletes, and world-renowned weightlifting schools educate high-performance athletes in favor of "keeping the secret ” training of their own athletes [37, 56, 60].

- *analytical study* on the factual materials: the competition regulations developed by the International Weightlifting Federation, by the Weightlifting Federation of Moldova, the classification programs by age and weight categories of athletes, the training programs for weightlifters from specialized sports schools for children and youth, as well as private clubs, etc. [9, 13, 26, 36];

- *sociological questioning* [30] of weightlifting specialists provided for the involvement by expressing opinions vis-à-vis the original approaches to the training of beginner athletes, to develop a more efficient system for planning the specialized sports training process for the period of a macrocycle of two years (it should be noted that 59 weightlifting specialists from 13 specialized weightlifting sports centers in the Republic of Moldova participated in our survey);

- *pedagogical observation,* carried out on the period of registration and selection of applicants for the weightlifting event, on the hereditary factors that characterize certain states in the further development of the student, on the manner of sports behavior in the training hall, on somato-functional, anatomical-physiological peculiarities and others [8, 12, 20, 27, 29];

- *anthropometric methods* research (somatometric indices: waist, body mass, rib cage perimeter; somatoscopic indices: rib cage shape, degree of muscle development, etc. in order to collect information regarding the development and growth of the athlete's physical parameters [3, 5, 7 , 13, 19, 22, 40];

- *the method of symmetrical exercise systems* (synchronization of physical exercises carried out in the sagittal plane (in which the aim was to preserve the balance of the symmetrical execution between the left and right sides of the body); in the transverse plane (giving equal effort, keeping the balance between the upper (top) and the lower part (from below) of the body; in frontal plan (providing equal proportions of effort in executions between the anterior (front) and posterior (back) part of the body. (It should be noted here that symmetrical exercise systems work in close correlation with the quartiles (quantiles) methodology , which implies reporting an ordered set of data into parts of equal size [31, 45, 47, 49, 50, 51, 54];

- *the pedagogical experiment method,* through which the practical examination of the program developed for the period of two years of training young athletes was determined. The examined group consisted of two (homogeneous) groups of beginner athletes (10 athletes each), where the experimental group was trained according to the developed experimental program [11, 16, 24, 29, 33].

- *programmed training method,* by which the program or the conducting scenario with the wide area of specific exercises stood out. This method is one of the methods of equating the planning of the training activity, given that by means of programming the order and succession of the instructional actions oriented in time and in the form of detailed planning on all the training actions is established (in addition, **programmed training method** offers the possibility to intervene rationally on the rigorous selection of training means) [8, 10, 19, 25, 28, 39].

Scientific novelty and originality are determined by the elements of creativity by elaborating the forms of planning the training process at the initial stage, through which the preparation actions

fully coincide with the specifics of the event and the age of the athletes. The development of symmetrical exercise systems represents the original elements of this study, which aimed to develop a proportional, balanced and symmetrical body by applying special exercises in the front, sagittal and transverse axis, which is particularly important for the stability of the barbell during lifting and fixing it above the head.

The results obtained are conditioned by planning the training process at the early stage in weightlifting, planning based on the application of symmetrical training systems, which is the main element of centralized training during the period of intensive development of the young athlete. These led to a symmetrical and balanced development of the parts and sides of the body, which allowed the athletes to perform the required training efforts.

The theoretical significance reveals the conceptual importance of the ideas and theories that provide for the forms of planning the training process in the early stage, as a primary factor in the foundation of the system-based process, which begins with an expanded planning and through which all activity objectives are drawn. These can be interpreted as: plans, programs, projects, sheets, schemes, protocols, graphs, etc., which can serve as didactic-methodical material and orientation towards a good organization of the training process.

Applicative value of the research consists in increasing the effectiveness of the training process of beginner weightlifters by applying the system of sequential planning of training efforts, based on the application of symmetrical training systems, which will make it possible to effectively solve training tasks in the subsequent stages of multi-year training.

Implementation of scientific results in practice, aimed to implement the experimental program developed during the initial stage of the training process with weightlifters in specialized weightlifting sports schools in the Republic of Moldova. Based on specific forms of planning the training process and symmetrical training systems, the experimental approach contributed to the rationalization of the structure and content of the training during the two-year period. The approached methodology showed positive resonance among weightlifting coaches and athletes from the republic, and some of these innovations were extended within the training process in specialized weightlifting sports schools in Chisinau, Balti, Nisporeni, Cahul, Comrat, Ungheni, Untesti , Singerei, including the Sports Center for the training of national weightlifting teams.

THESIS CONTENT

1. THEORETICAL AND SCIENTIFIC APPROACHES ON PLANNING THE WEIGHTLIFTERS TRAINING PROCESS (basic content of chapter 1).....

The concept of planning the weightlifters training process

The system of planning the training process in weightlifting has its own specifics, because the entire training activity is oriented towards mastering the two competitive weightlifting events: pulled and thrown. Being complex in terms of content, the multi-year training process of weightlifters branches into several periods and stages, each with its own characteristics of structure, volume and content of the study material in order to properly organize the training process to achieve the best results [6 , 2. 3].

The concept of planning in weightlifting highlights a series of key positions, where the entire training activity is based, namely:

- developing in advance the training strategy at various stages of the athletes' training;
- the concrete establishment of work goals and objectives in order to determine the orientation of the training activity for all periods and stages;
- careful preservation of educational elements during the entire period of sports training;
- concretization of the specific particularities of interaction with the pedagogical process of activity with young athletes;
- looking for the formation of a system of knowledge, skills and practical abilities in order to prepare and achieve the objectives that provide for the performance of competitive exercises;
- identification of training directions according to the interests of modern sport, oriented to world levels of achieving results.

In another order of ideas, according to the descriptions of specialists [5, 10, 26, 36], the weightlifting training process planning system is oriented to: coordination, organization and continuous monitoring of the training process.

The weightlifting training process planning system also provides: coordination with the human potential of the club (coaches, technical staff, athletes, auxiliary support teams, establishing agreements with the parents of the young athlete, as well as concluding agreements with organizations and enterprises profile; designing and monitoring for the fulfillment of training programs for all training periods and stages; monitoring the training process regarding the quality of the training activity; ensuring the training conditions of athletes and their participation in the competition; coordinating the promotion and modernization of training methods and means training.

According to Oghiust Kont (cited by Balandin V.I.) [39, p.10], the essence of planning and forecasting in sports as: "to know- to foresee, to foresee- to act". Thus, all the provisions in the form

of planning the training process in the weightlifting event (in other words, as in other Olympic sports events) establish the totality of actions with which the training process will be carried out.

Specialists in the field [10, 36, 40, 46] also note the fact that only on the basis of concrete forms of planning can concrete action decisions be made with certain ways of performing physical exercises, outlining here the entire informational potential oriented towards achieving the goal . The idea is emphasized that "the more thoroughly the training activity is planned, the more clearly it will be possible to act with the specific means of practice.

There are some principles, which are the basis of the system development of planning the training activity [10, 46]: reporting the planning of the training activity to the maximum of coincidence with the objective reality of work in gyms. Specialists in the field [2, 7, 14, 44] confirms the idea that it is necessary, as in the programming the training activity, to highlight the system mechanisms that the coach and the athlete may encounter in the work practice.

Researchers in the field [13, 25, 29, 32, 36] state the role of planning in achieving performance results, which is due to the realization of a series of prescriptions, namely: the programming and planning the training material must contain perspective goals. They must denote an uninterrupted system, which can lead to a continuity in order to obtain the results; the planning system must provide for a series of proportionalities and optimal indices to achieve the objectives; the design of the training material must predict the actual way the training process will unfold; in order to plan the training material, it is necessary to maintain objectivity in order to successfully achieve what is programmed.

The concept of planning the training process of weightlifters carries, at the same time, a character of progressivity [38, 42]. The element of planning here is tangential to that of forecasting. In this sense, specialists in the field [2, 43] recommend some current changes in the preparation activity at certain phases, which contribute to the flexibility of the program, which will give athletes chances to successfully complete the entire volume of material, even exceed (in the case of achieving all the planned objectives), and the revision of the unachieved sides, in case of some unsuccessful ones of the athletes.

At the same time, weightlifting is not "without weights". Therefore, a new form of programming and selective planning of the training process intervenes to help remedy many non-conformities, namely at the initial stage, considered, by the working group, as one of the stages of high responsibility for the preparation and offering of a "raw material of quality" for the subsequent stage of preparation: the stage of selection and in-depth sports specialization. Both the forms of planning and other types of activities that the athlete goes through in a daily, weekly, monthly, yearly and biannual cycle became the subject of work in this study.

Approaches to planning the training process at the initial training stage of weightlifters according to the symmetry indices and proportionality in performing exercises

Dealing with the problems related to the planning of training activities at the initial stage of training of weightlifters according to the symmetry indices and proportionality in performing exercises turns out to be particularly topical, since these concepts define the extremely valuable role of correctness, both in the performance of preparatory, special exercises etc., but first of all: to the balanced development of the body parts and the organism in general of the athlete. Certainly, the elements of symmetry and proportionality in the performance of all specific actions must ensure an equal development between the parts of the body so that the lifting of the weight to be performed in a stable balance and without any deviations, which in competition exercises is particularly important [21, 31, 40, 45].

This element is not always the primary concern of coaches, especially at the early stage in a multi-year process of weightlifter training [33, 41, 49, 53].

According to [47, 54, 55, 57, 58, 59] symmetrical systems, the elements of proportionality and correctness when performing weightlifting exercises require:

- detailed analysis of the content of the training material from the anatomic-physiological, biomechanical, kinetic, etc. point of view;
- the selective highlighting of the categorical segments from the entire knowledge content, considered the most essential to focus attention on the execution algorithms during weightlifting;
- achieving the correlation between the execution phases, which is the most important means for establishing the specific motor chain of practice.

At the same time, it should be mentioned that studying the analytical effect of execution manners in weightlifting according to the requirements of the technique of competition procedures, the elements of symmetry and correctness show that in order to master some movements in principle, sometimes they exaggerate the finesse of execution according to the ultra-technique modern workout routines, which can confuse flexibility in the wide range of motion afforded to balanced development in weightlifting. At the same time, the principle of establishing correctness and proportionality in orderly physical development prevents this from the very beginning, as does the prevention of overexertion, which the coach imposes on beginner athletes from the very first training sessions. In addition to this, the elements of symmetry, proportionality and correctness when performing the movements directly condition the degree of effectiveness and quality of training the motor act in weightlifting [34, 48, 57, 60].

The symmetrical systems, the elements of proportionality and correctness for beginner weightlifters, however, induce new programming schemes of specific actions in lifting weights,

impose new changes in the way of treating exercise actions, bring together the attitudes of athletes, taking into account their age, and in connection with this, the distribution of contents in the general structure of the training programs also changes.

The symmetrical systems, elements of proportionality and correctness dictate the need to constantly approach the practical training level of the weightlifter, to the sufficient and efficient development of his organism, to the level of developing modern science [15, 17, 45].

It is also important to mention that in barbell mastery the symmetry of the sides can ensure correspondence between them (full correspondence between the two sides of the barbell). And not in vain the distributions provided by the quartiles, when lifting the weight prove to be those elements, which fractionate the bar by means of the grips with both hands into three segments. Next, the aspect of symmetry comes into discussion where the grips of both hands are placed strictly at the same distance and so that during the lifting of the weight the same trajectories are demonstrated (executed).

In the working practice of the weightlifting training process, even in many events, treating this concept is not addressed. This is also the opinion of the respondents (specialists) interviewed through the sociological survey, where the elements of symmetry in the training process are given attention in the proportions of 6% (details about the results of the survey can be consulted in the Appendices of the paper). Such systems are neither known, nor essentialized in detail, nor subject to study.

Symmetric training systems, as well as elements of proportionality in the training of beginner weightlifters are considered particularly necessary, because they foresee the relevance of establishing the most effective regulatory mechanisms regarding the correctness of practical exercises. These mechanisms can contribute to the formation of a chain of systematized actions, to the creation of skills and practical abilities, which lead to the development of schemes and montages of the execution technique of competitive weightlifting movements at a perfect level of practice.

Specialists in the field confirm the elements of proportionality in the body's development as those that ensure "the ratio between the sizes of the muscle groups" [55]. They ensure a rational approach to exercises during training and involve their harmonious development. The symmetry of the muscle groups highlights the aspect of "development of harmony in laterality, the skeletal muscles, being formed, in most cases, of paired muscles" [53, 54].

2. EXPERIMENTAL RESEARCH METHODOLOGY ACCORDING TO THE NEW VIEWS OF PLANNING THE BEGINNER WEIGHTLIFTERS TRAINING PROCESS

(basic content of Chapter 2)

Methodological research elements

The methodological research elements aim at a set of activities developed and imposed by the experimental study [6, 32, 39]. They are determined by the main interest of the paper: planning the weightlifters training process at the initial stage. Obviously, in order to carry out a quality training process for the subsequent stage, everything starts from a good planning of the training process, where the programming to carry out the actions are strictly taken into account, which leads to a proportional, balanced and equilibrated training of the young athlete.

The methodological research elements include specific contents adjusted to the achievement of the purpose and objectives, namely: analytical and generalization study of the theoretical-scientific aspects regarding the weightlifters training treated in the specialized literature; arguing the practical peculiarities of training weightlifters in the training process at the initial stage in weightlifting; feature analysis of the concept of planning the weightlifters training process at the initial stage; content description of specific forms of training activity planning; elaborations on the planning of training activities at the initial stage of training according to symmetrical systems of performing exercises (it should be noted that symmetrical systems of exercise are requested to be used in all periods of planning the training process, both within a macrocycle of two years of training, as well as the other cycles, up to the weekly training microcycles); the discovery of new laws and principles in planning the weightlifters training process at the initial stage of training in relation to the requirements of the subsequent stage of sports specialization.

Methodological approaches of research enumerates: the method of the analytical study of the specialized literature; analysis, review and documentation with the existing standard acts in specialized weightlifting sports schools for children and youth; sociological survey and interview method; the pedagogical observation method; anthropometric research methods; the method of symmetrical training systems; programmed training method, biomechanical methods, by using the kinocyclogram method; computerized recording methods; the pedagogical experiment method; statistical-mathematical methods of processing the results.

Development of exercise modules based on symmetrical execution systems

In the research carried out by us, an innovative and effective research method was used ***-the method of symmetrical training systems.*** As previously mentioned, the method of symmetrical exercise systems was aimed at synchronizing the physical exercises performed in the sagittal plane (in which the aim was to preserve the balance of the symmetrical execution between the left and

right sides of the body); in the transverse plane (giving equal effort, keeping the balance between the upper (upper) and lower (lower) parts of the body; in frontal plan (offering equal proportions of effort in executions between the anterior (front) and posterior (back) part of the body. For this purpose, 16 exercises were developed - 4 modules of 4 exercises each, of which: 8 performed using the barbell bar/barbell and 8 exercises performed on multi-functional exercise equipment taking into account the parts and sides of the body targeted by the three axes mentioned above. The exercises have been developed in such a way as to include in the chain of motion the muscle groups participating in the motor act, aiming in turn, during the execution technique of the competition events (pulled and thrown), but with the condition of maintaining symmetry in the execution under all angles and all segments of the body. In order to achieve this objective, they were applied Green Pointer L780 laser pointers (indicators), which marked the direction, spatial parameters and limit points after which the barbell lifted (or pushed) by the athletes must move.

Certainly, measurements under such conditions required the weightlifter to show maximum correctness in lifting the weight (or driving it) depending on the direction and form of movement, and the results were recorded according to the correct number of executions and the number with certain errors in execution. At the same time, it is recognized that the exercises performed in free form of lifting the barbell are more difficult, where it is necessary to master them within the limits of some execution parameters, given that they were performed in series, and at the time of energy exhaustion of the body, certainly, essential deviations occur in the correct performance of the movement. At the same time, the performer became obliged to repeat the movements within the parameters traced by the laser rays of the used device.

In this way, and with the condition of keeping the sides symmetrical in the executions, the weightlifter became obliged to make equal efforts in carrying out the movement of lifting the weight by both parts of the body, agreeing to keep the balance in the execution and to lift the weight without deviations from the requirements of the classical technique, provided by the competition participation programs.

The elaborated exercises included symmetrical movements for all parts of the body and provided for equal distributions to be performed in 16 forms of movement. At the same time, they included all the muscle groups included in the weight lifting work for the two classic events (pulled and thrown). Also, these exercises were intended to be performed taking into account the axes of the body and the parts divided by these axes. Thus, the exercises involved the coupling of modules, each of which has a destination and a special explanation in execution.

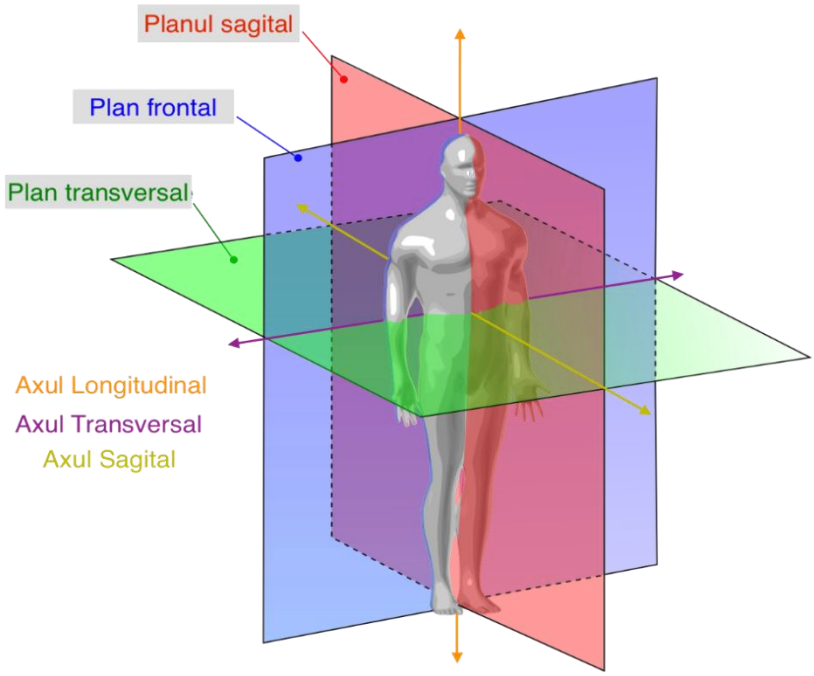

Fig. 1. Axes of the human body [62]

In the same context, we find that the respective exercises have a specific character, so they are part of the special physical training of the subjects included in the pedagogical experiment.

Planning the training process for a two-year training macrocycle

The viability of the programmed experimental schemes emerges from the achievement of the objectives for the period of the two-year training macrocycle, the annual cycle, the semester cycles of half a year, those lasting one month, the weekly and daily microcycles and the particular tasks within a training session: (in this sense, the course of the training of the beginner weightlifter had, initially, decipherments at the level of the weekly cycle, which certainly consists of daily training hours). Taking into account the days with a real working regime, the regime of a week was established, from which it was possible to create a microcycle for the period of a month, so that later, these would become constitutive periods of a semi-annual macrocycle (half of year).

Each of the modules included four exercises, two of which were performed with barbell and two with multi-functional equipment (total 16).

Thus, the planning of the training activity for this stage provided for: establishing the number of hours for the period of one week, which, at the initial stage (the first half of the year), represented four weekly training lessons in the first month of training of two academic hours each of activity and five training lessons of three hours of activity over the next four months. It should be noted that during the first months of training, the sessions were scheduled only for the afternoon period of the day.

Table 1. Planning of special physical training (experimental program) characterized by symmetrical systems for performing exercises, applied within the pedagogical experiment (exercises performed with barbells and on multifunctional equipment)

No.ex.	MODULES - EXERCISES
Module I.	
Exercises for front axle (anterior): **UPPER-FRONT performed with barbell**	
1.	From sitting on the bench, barbell to chest for throw (medium grip). Action: Pushed up with lock
2.	From sitting, barbell down on racks, pulled out grip (overhand grip). Action: pull (raise) to the chest level
Exercises for front axle (anterior): **UPPER-FRONT performed on multi-functional equipment (fitness equipment)**	
3.	From sitting grabbed up-far to multi-functional, pulled out grip. Action: Helcometer pull-ups
4.	From sitting medium grip horizontal bars (throw grip). Action: pushing in horizontal direction
Module II.	
Exercises for front axle (back): **UPPER-BACK performed with BARBELL**	
5.	From standing barbell to medium overhand grip (throwing grip). Action: Pushed up with lock
6.	From standing barbell behind overhead grab (pull-up grip). Action: Extended forward bend
Exercises for front axle (back): **UPPER-BACK performed on multi-functional machines (FITNESS equipment)**	
7.	From lying face down, barbell to the back of the head. Action: 45° extension
8.	From sitting grab up-away (pull-up grip) at helcometer. Action: pulling the bar behind the back
Module III.	
Exercises for transverse (anterior) axis: **DOWN-FRONT performed with a barbell**	
9.	From standing, barbell on shoulders, grabbed medium grip for thrown. Action: barbell Chest Squat
10.	From standing, barbell behind head, medium grip (throw grip). Action: Scissor Squat
Exercises for transverse (anterior) axis: **DOWN-FRONT performed on multi-functional machines (fitness equipment)**	
11.	From standing with toes elevated (below a 45° angle), the bars on shoulders. Action: Raise on toes with ankle extension
12.	From standing, barbell to chest, medium grip (throw grip). Action: Squat
Module IV.	
Exercises for transverse axis (back): **DOWN-BACK performed with barbells**	
13.	From standing, toes on height, barbell behind head, thrown grip. Action: lifting-down on toes
14.	From sitting, barbell behind head, overhand grip (pull-up grip). Action: barbell squat
Exercises for transverse axis (back): **DOWN-BACK performed on multi-functional machines (fitness equipment)**	
15.	From sitting, barbell behind head in support on racks, medium grip, thrown grip. Action: squat
16.	From lying on your back, obliquely, under 45° angle, the bars on shoulders. Action: Squat.

Starting with the second semester of the first year, morning training sessions are also included, each having two academic hours. In the first month, two training sessions were held, and in the following two months they were in the volume of four training lessons, so that later, their number would increase to five daily lessons. At the same time, the training lessons in the afternoon period remained constant for three hours daily during four training sessions per week (three academic hours each training session) until the end of the first year.

In total, for the period of the first year of training, the number of training sessions constituted 259 sessions with a volume of 885 hours. For example, the month of September, with a volume of 34 hours, constituted 3.84% of the total volume of hours annually, while in the following months, this percentage increases every month. In the next four months of the biannual mesocycle, the number of afternoon trainings rises to five, and in the following half-year period, morning trainings are also included, which makes the preparation process intensify according to the frequency of classes and their alternation. The beginner athlete is drawn into a much more active and dynamic process, this being an efficient, operative and, at the same time, intensified accommodation solution to the subsequent efforts that will follow in the second year of training cycles.

At the same time, it should be noted that with the inclusion of morning training, the number of days with afternoon training decreases (from five to four), because for Thursdays of each week recovery procedures and activities are included during afternoon. Thus, on these days, only the morning training is carried out, including the training for Saturday is also added. In total, weekly, the number of trainings amounts to nine, which, for the end of the first year of the two-year training cycle, the respective planning is considered adequate.

The pedagogical experiment

The pedagogical experiment constituted the main element of the research. Thus, the experimental group (n = 10) represented subjects registered at the specialized weightlifting sports school within the Municipal Boarding High School with sports profile, and the control group (n = 10) within the specialized weightlifting sports school in Chisinau.

All experimental examinations were carried out with the aim of establishing the degree of development of the athletes of the experimental group compared to that of the control group. The testing of the subjects involved in the experiment was carried out on the parameters established by the research, and the demonstrated results were statistically analyzed on the same types of testing, both at the initial stage and at the completion stage of the study. At the same time, the tests carried out made it possible to establish the effectiveness of the experimental program developed and applied in the practice of the weight training process with beginner athletes.

3. EXPERIMENTAL ARGUMENTATION OF THE PLANNING METHODOLOGY OF THE TRAINING PROCESS BASED ON THE WEIGHTLIFTERS SYMMETRICAL EXERCISING SYSTEMS (Basic content of Chapter 3)

Experimental argumentation of planning the beginner weightlifters' special physical training based on symmetric exercise systems

In order to carry out the experimental project, namely the special physical training according to the symmetrical systems of performing exercises, the example of planning these activities in a weekly training cycle of beginner weightlifters is brought (extract from the planning for March 2 nd year). Table 2 shows this distribution of the performance of the experimental exercises developed for 6 weekly days within the two daily training sessions.

The practice actions distributed on the modules are planned in series and number of repetitions according to the planned program. For example, module I, which includes the first 4 exercises, provided weightlifting with barbells for Mondays, Tuesdays, Wednesdays and Fridays, and for multi-functional exercise machines these were performed on Wednesdays, Thursdays, Fridays and Saturday. For module III, Monday, Wednesday and Friday were included in the program and requested, but for module II and module IV, they were carried out on Tuesday, Thursday and Saturday. The alternation of executions within the exercises with the barbell and within the exercises performed on the multifunctional equipment provided for the training of accurate and correct mechanisms in establishing the degree of possession of the skills and motor abilities acquired at a higher level.

Table 2. Planning of special physical training according to symmetrical systems of exercise performance in a weekly training cycle with beginner weightlifters

MODULE	No. YEAR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
MODULE I	1	4 x 8	4 x 8	4 x 8		4 x 8	
	2	4 x 8	4 x 8	4 x 8		4 x 8	
	3			4 x 10	4 x 10	4 x 10	4 x 10
	4			4 x 10	4 x 10	4 x 10	4 x 10
MODULE II	5	4 x 8	4 x 8		4 x 8		4 x 8
	6	4 x 8	4 x 8		4 x 8		4 x 8
	7	4 x 4	4 x 4		4 x 4		4 x 8
	8	4 x 8	4 x 8		4 x 8	4 x 8	
MODULE III	9	3 x 6		3 x 6		3 x 6	3 x 6
	10	3 x 6		3 x 6		3 x 6	3 x 6
	11	4 x 8		4 x 8		4 x 8	4 x 8
	12	3 x 6		3 x 6		3 x 6	3 x 6
MODULE IV	13		4 x 8	4 x 8	4 x 8	4 x 8	
	14		3 x 6	3 x 6	3 x 6	3 x 6	
	15		4 x 8	4 x 8	4 x 8		4 x 8
	16		4 x 6	4 x 6	4 x 6		4 x 6

Note: 1- 16 the number of the exercise in the experimental program;
4 x 8: (4- the number of sets in an exercise; 8 - the number of repetitions in a set.

These experimental exercises were mostly carried out with the preservation of the lifting direction, the muscle tensions and the proportionality of the sides so that the muscle groups only perform the movement activity in a balanced manner, which matters for the development, also balanced, of body parts. In addition, the exercise actions were guided and oriented with the help of Laser installations on both sides of the execution corridor, both in raising and lowering the barbell. Here, the athlete was conditioned to fit within the corridor limit provided for lifting the weight, avoiding any deviation from it. So, ***symmetric execution systems*** it effectively conditions the formation of the correct stereotype in weightlifting due to the muscular efforts applied symmetrically on both sides and sides of the body.

The results of the training of athletes based on the symmetrical systems of exercise of the subjects of the experimental and control groups at the final stage of the research are presented in Table 3.

Table 3. Comparative analysis of the level of special physical training of the subjects of the experimental and control groups at the final stage of the research (x±m)

No. ct.	Parameters tested	Experimental group. (n = 10)	Control group (n = 10)	t	P
Module I					
Exercises for anterior front axle : **UPPER-FRONT performed with barbell**					
1.	From sitting on the bench, barbell to chest for throw (medium grip). Action: Pushed up with lock(kg)	37,0 ±1,62	30,0±1,08	3,01	<0,05
2.	From sitting, barbell down on racks, pulled out grip (overhand grip). Action: pull (raise) to the chest level (kg)	34,5±1,62	28,5±1,08	1,84	<0,05
Exercises for front axle (anterior): **UPPER-FRONT performed on multi-functional equipment (fitness equipment)**					
3.	From sitting grabbed up-far to multi-functional, pulled out grip. Action: Helcometer pull-ups (kg)	48,5±2,16	37,0±1,62	2,87	<0,05
4.	From sitting medium grip horizontal bars (throw grip). Action: pushing in horizontal direction (kg)	54,0±4,32	45,5±2,70	2,27	<0,05
Module II					
Exercises for front axle (back): **UPPER-BACK performed with BARBELL**					
5..	From standing barbell to medium overhand grip (throwing grip). Action: Pushed up with lock (kg)	39,5±2,70	32,0±1,62	2,55	<0,05
6.	From standing barbell behind overhead grab (pull-up grip). Action: Extended forward bend(kg)	39,0±2,70	31,5±1,08	2,77	<0,05
Exercises for front axle (back): **UPPER-BACK performed on multi-functional machines (FITNESS equipment)**					
7.	From lying face down, barbell to the back of the head. Action: 45° extension (kg)	40,0±2,16	29,0±1,08	4,33	<0,01
8.	From sitting grab up-away (pull-up grip) at helcometer. Action: pulling the bar behind the back (kg)	44,0±2,70	33,5±2,16	3,37	<0,05

Module III					
Exercises for transverse (anterior) axis: **DOWN-FRONT performed with a barbell**					
9.	From standing, barbell on shoulders, grabbed medium grip for thrown. Action: barbell Chest Squat (kg)	89,5±5.41	79,5±5,41	3,14	<0,05
10.	From standing, barbell behind head, medium grip (throw grip). Action: "Scissor" Squat (kg)	43,0±2,16	37,0±1,08	2,36	<0,05
Exercises for transverse (anterior) axis: **DOWN-FRONT performed on multi-functional machines (fitness equipment)**					
11.	From standing with toes elevated (below a 45° angle), the bars on shoulders. Action: Raise on toes with ankle extension (kg)	45,5±3,24	21,2±0,64	2,25	<0,05
12.	From standing, barbell to chest, medium grip (throw grip). Action: Squat	81,0±5,41	69,0±2,16	3,08	<0,05
Module IV.					
Exercises for transverse axis (back): **DOWN-BACK performed with barbells**					
13.	From standing, toes on height, barbell behind head, thrown grip. Action: lifting-down on toes (kg)	42,0±2,70	34,0±1,08	2,96	<0,05
14.	From standing, barbell behind head, overhand grip (pull-up grip). Action: barbell head squat	104,5±6,94	83,0±1,62	9,74	<0,001
Exercises for transverse axis (back): **DOWN-BACK performed on multi-functional machines (fitness equipment)**					
15.	From sitting, barbell behind head in support on racks, medium grip, thrown grip. Action: squat (kg)	97,0±6,49	86.0±5,13	4,49	<0,01
16.	From lying on your back, obliquely, under 45° angle, the bars on shoulders. Action: Squat. (kg)	85,0±5,24	80.0±5.27	1,13	<0,05

Note. For n= 18, the critical value of the t-Student criterion, for the significance threshold of 5% (P<0.05), will be equal to 2.10; for the 1% significance level (P<0.01), will be equal to 2.87; for the significance threshold of 0.1% (P<0.001), will be equal to 3.92.

The dynamics of the results at the final stage of the research for the 16 exercises, within the four modules, is presented in Figures 2 – 5.

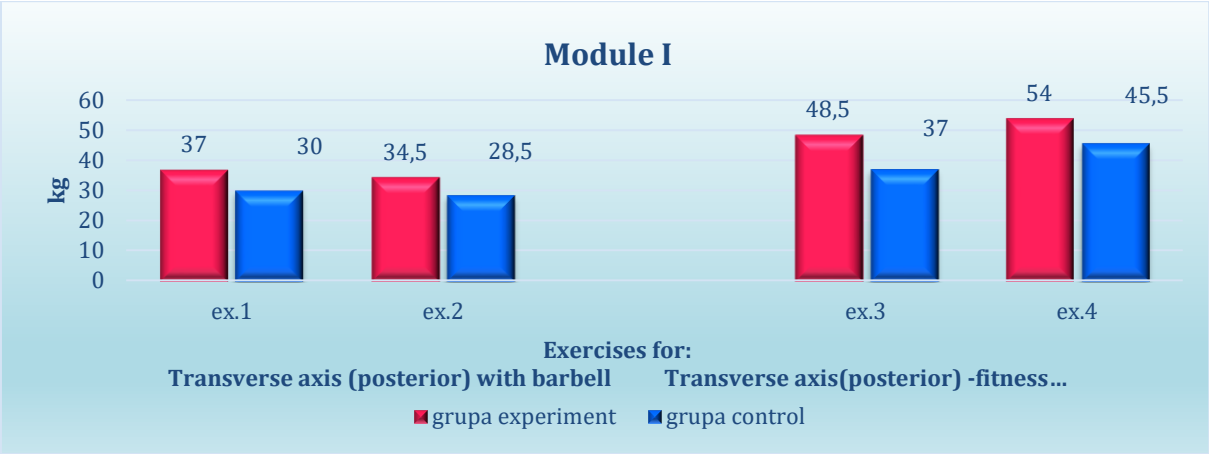

Fig. 2. The dynamics of the level of special physical training of the subjects of the experimental and control groups (anterior front axis), at the final stage of the research

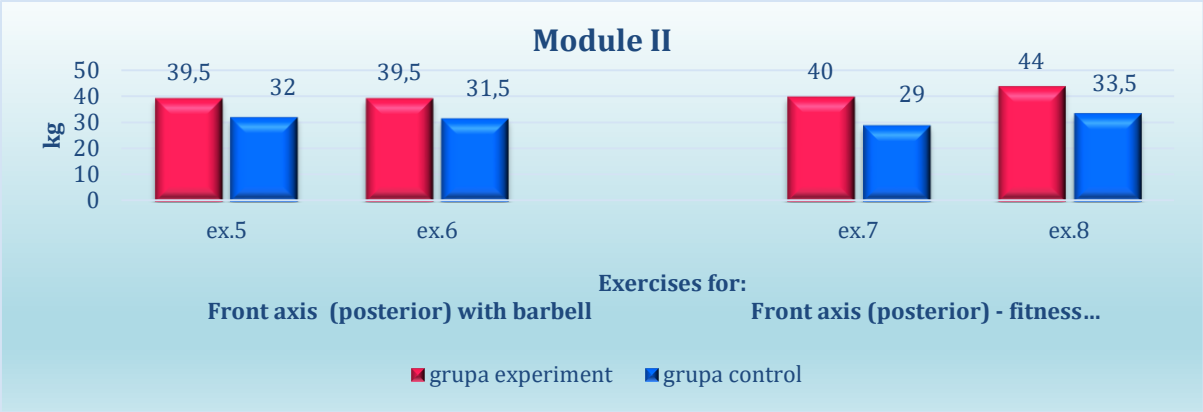

Fig. 3. The dynamics of the level of special physical training of the subjects of the experimental and control groups (frontal back axis), at the final stage of the research

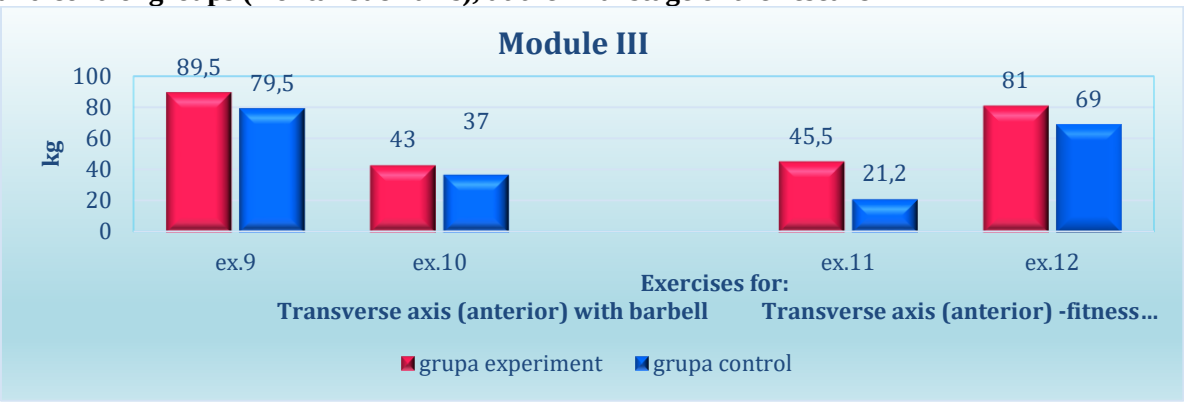

Fig. 4. The dynamics of the level of special physical training of the subjects of the experimental and control groups (anterior transverse axis), at the final stage of the research

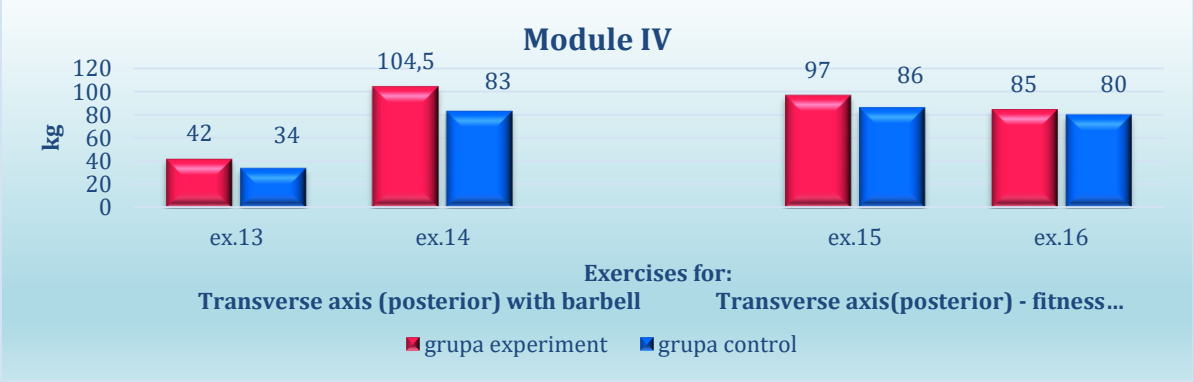

Fig. 5. The dynamics of the level of special physical training of the subjects of the experimental and control groups (back transverse axis), at the final stage of the research

The impact of the experimental form of planning the training process on the level of physical development of the body of beginner weightlifters

The purpose of this section of the study was to highlight the influence of the experimental form of planning the training of weightlifters at the initial stage on the degree of physical development of the athletes' body. Such assessments were carried out by means of anthropometric

research tests, namely: module I - of somatometric indices and module II - of somatoscopic indices. The main objective was to determine the degree of development of the body and the increase in body parameters, based on the application of symmetrical exercise systems, namely, the modules made up of the 16 exercises presented above. Starting from the central idea that such exercises will condition proportionality, ambidexterity and balance in the development of the parts and sides of the body, the aim was to catalog their influence on obtaining optimal body parameters, especially within indices 2-4 of module I, and 1 – 4 of module II.

Thus, within the measurements according to the criteria in module I, where the indices: body waist, body mass, dynamometry in the left hand, dynamometry in the right hand were taken into account, various results were obtained at different test stages. As well as various results were obtained in the second module, where somatoscopic indices were tested, including: examination of posture, examination of the shoulder girdle, examination of the waist triangle and inspection of the lower limbs.

The results obtained on the criteria for testing the level of physical development are presented in Table 4.

Table 4. Comparative analysis of the anthropometric measurements of the subjects of the experimental group at the initial and final stages of the research (x±m)

No. ct.	Parameters tested	**The initial stage**(n=10)	**The final stage** (n=10)	**t**	**P**
Module I					
Testing of somatometric indices **(x±m)**					
1.	Body Waist (cm)	152,9±0,01	161,3±0,02	4,20	*<0,001*
2.	Body mass (kg)	46,0±0,36	55,4±0,11	4,14	*<0,01*
3.	Left hand dynamometry (kg)	8,5±0,75	27,8±0,24	5,10	*<0,001*
4.	Right hand dynamometry (kg)	13,9±0,6	28,6±0,27	4,88	*<0,001*
Module II					
Testing of somatoscopic indices **(from 10 p.) (x±m)**					
1.	Posture examination	7,7±0,03	9,3±0,10	3,28	*<0,05*
2.	Examination of the shoulder girdle	7,4±0,2	9,1±0,10	4,40	*<0,01*
3.	Examining the triangle	7,4±0,32	8,8±0,21	3,32	*<0,05*
4.	Inspection of the lower limbs	7,9±0,32	9,5±0,21	4,04	*<0,01*

Note. For n= 10, the critical value of the t-Student criterion, for the significance threshold of 5% (P<0.05), will be equal to 2.23; for the 1% significance level (P<0.01), will be equal to 3.17; for the significance threshold of 0.1% (P<0.001), will be equal to 4.58.

Certainly, it is important to highlight the results obtained by the subjects **the experimental group** and subjects of ***the control group at*** *the* ***the final stage*** of research. Based on the same test criteria and parameters, the following results were obtained: body waist reached an average of 161.3 cm in the subjects of the experimental group, compared to 159.7 cm in the subjects of the control group, where t=1.4; P>0.05, results, where a small tendency to increase the height of the athletes in the experimental group is found. At the same time, the statistical difference is not significant, even if the physical difference is 1.6 cm; body mass represents a statistical difference with P<0.05, where the subjects of the experimental group reach heights of 55.4 kg on average compared to 52.7 kg in the subjects of the control group; dynamometry on the left hand in subjects of the experimental group reaches an average of 27.8 compared to 21.7, where t=4.23 and P<0.0; the dynamometry of the right hand increases significantly more pronounced from a statistical point of view with a difference of t=5.04, P<0.001 according to the results: 28.6 for the subjects of the experimental group compared to 16.0 demonstrated by the subjects of the control group.

Regarding the significant statistical differences of P<0.01 - <0.001 when determining the strength on the left hand and the right hand, this is due to the work with intensity and with the proportional norm of effort in the exercise program proposed to the subjects of the experimental group. Results of anthropometric measurements are presented in Table 5.

Table 5. Comparative analysis of the anthropometric measurements of the subjects of the experimental and control groups at the final stage of the research (x±m)

No. ct.	**Parameters tested**	**Experimental group (n=10)**	**Control group (n=10)**	**t**	**P**
	Module I.				
	Testing of somatometric indices **(x±m)**				
1	Body Waist (cm)	161,3±0,02	159,7±0,02	1,4	*>0,05*
2	Body mass (kg)	55,4±0,11	52,7±0,34	1,9	*<0,05*
3	Left hand dynamometry (kg)	27,8±0,24	21,7±0,18	4,23	*<0,01*
4	Right hand dynamometry (kg)	28,6±0,27	16,0±0,19	5,04	*<0,001*
	Module II.				
	Testing of somatoscopic indices **(from 10 p.) (x±m)**				
1	Posture examination	9,3±0,10	8.5±0,32	2,08	*<0,05*
2	Examination of the shoulder girdle	9,1±0,10	8,7±0,32	1,84	*<0,05*
3	Examining the triangle	8,8±0,21	8,2±0,21	2,19	*<0,05*
4	Examination of the lower limbs	9,5±0,21	8,6±0,10	2,56	*<0,05*

Note. For n= 18, the critical value of the t-Student criterion, for the significance threshold of 5% (P<0.05), will be equal to 2.10; for the 1% significance level (P<0.01), will be equal to 2.87; for the significance threshold of 0.1% (P<0.001), will be equal to 3.92.

Testing **somatoscopic indices** shows significant statistical differences with t between 1.84 – 2.56, and P<0.05 in all four test samples. When examining the posture, the subjects of the

experimental group obtain an average of 9.3 points, compared to the subjects of the control group, who reach an average of 8.5±0.32 points. Similar results are also observed when examining the shoulder girdle (9.1 versus 8.7 points); examination of the triangle (8.8 compared to 8.2); and lower limb inspection (9.5 versus 8.6 points).

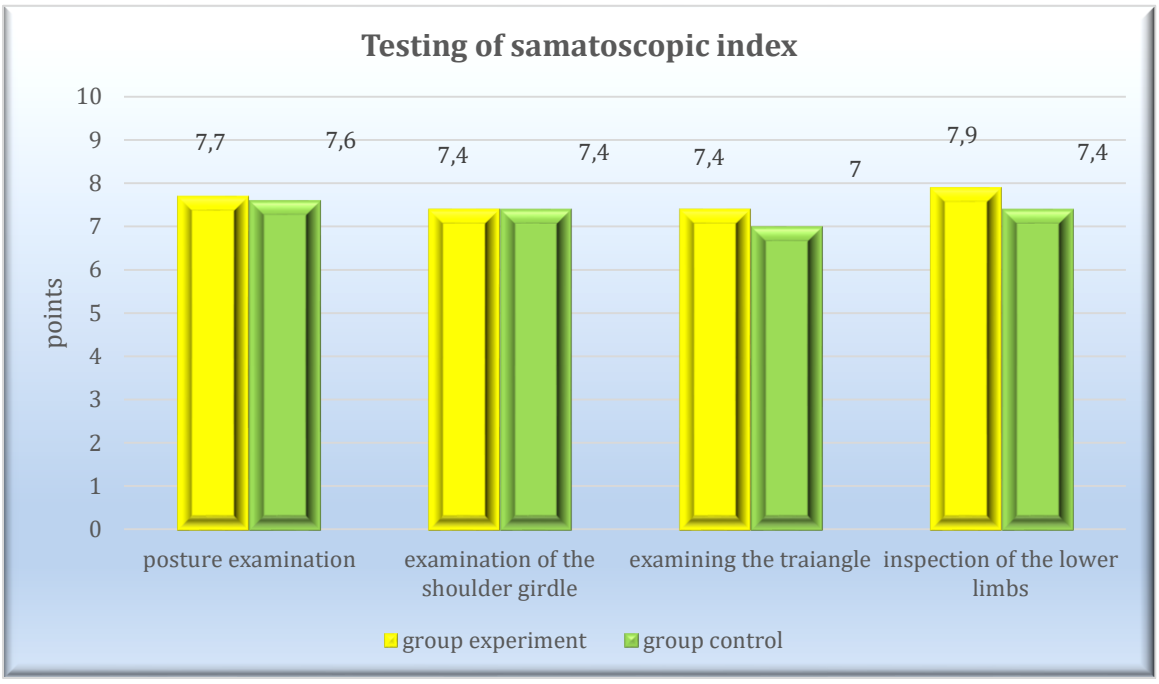

Fig. 6. Comparative graphic presentation of the anthropometric measurements (somatometric indices) of the subjects of the experimental and control groups at the final stage of the research

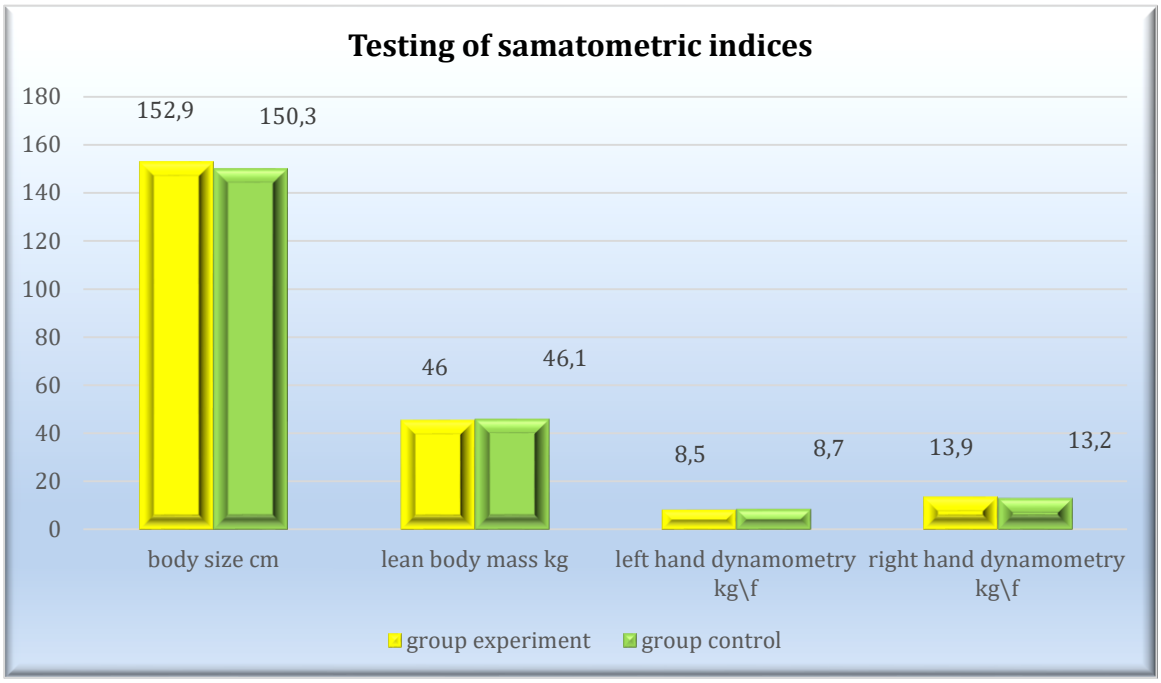

Fig. 7. Comparative graphic presentation of the anthropometric measurements (somatoscopic indices) of the subjects of the experimental and control groups at the final stage of the research

It can be noted that the levels of development of the athletes' body are definitely due to the forms of exercise planning included in the experimental program. The results obtained in the anthropometric tests are superior in the subjects of the experimental group compared to the results obtained by the subjects of the control group, these being influenced by the requirements of the applied experimental methodology. Obviously, an increase in results was also observed in subjects from the control group, but compared to the degree of correctness and development of the body parameters, the statistical indicators demonstrate superiority in favor of the experimental group. These results also influenced the level of technical training of the athletes (according to the data of the presentation in the official sports competitions organized at the national and international level). The sports performances obtained by the weightlifters who participated in the pedagogical experiment are demonstrated below.

Appreciation of the methodology for planning the training process of beginner weightlifters in order to transfer to the subsequent stage of sports specialization

Analyzing the period of experimental examination through the diversity of forms of planning the training process in weightlifting athletes at the early stage, we can mention that this investigative course conditioned restructuring in the traditional system of training athletes at the national level.

Training conditions according to new planning models conditioned effective results in the training of weightlifters at this stage, which provided a well-prepared "material" for the sports specialization stage. It can be appreciated that with the transition to another stage of training, the athletes advanced in age and, obviously, in higher weight categories. That's why the athletes reached various degrees in this regard and obtained qualification quotas in several weight categories. It was found the growing dynamics of sports performance achieved by beginner weightlifters within the pedagogical experiment during the research period.

The performances obtained are manifested by the achievement and fulfillment by the athletes of the transfer norms for the stage of sports specialization. At the same time, the results of the athletes obtained in the official evaluations (within sports competitions) at the national and international level demonstrated the qualification levels of the athletes trained in the experimental group in the composition of the National Team of the Republic of Moldova in Weightlifting (total 5 athletes). They justified the "experimental emblematic" carried out during the research period in the initial stage of training.

Thus, based on the new visions of planning the training process at the initial training stage of weightlifters, it can be stated that the results obtained in the experimental investigations have significantly contributed to *fixing the problem scientifically* sought in this study. This is considered the achievement of the proposed goal.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

1.The theoretical-scientific approaches to the system of planning the training process in weightlifting sport at present require a review of new forms of training of the new type of athlete, especially at the early stage. These have become apparent for a number of reasons: the age at which the athlete's training process begins in weightlifting has been lowered (according to international rules, weightlifters are allowed to compete from the age of 13, but to participate at this age requires a prior period of training, which will take place at the early stage. Both these milestones and the increasing modernity of training on the international arena have led to the synthesis of problems that can only be remedied on the basis of the most synthesized and coherent planning of the training process.

2. In the interest of the present research, a number of constructive ideas have arisen concerning the development of a new methodology for planning the training process of beginner weightlifters, which will be able to provide high-quality raw material for the next stage of training. Namely through the modern methodology of designing and planning the training process, the effective training of young weightlifters will be achieved. Thus, the aim, objectives and arsenal of means through which it will be possible to achieve the research subject was formed.

3. The experimental program of training beginner weightlifting athletes provided for highlighting, reasoning, reporting to the reality of working practice and the development of improved forms and contents of training activity planning. It consisted of 16 exercises, planned to be performed according to symmetrical systems of execution, coupled in 4 modules and systematized to be performed according to body axes.

4. The research methodology included: the study of the planning documents of the training process of weightlifters in weightlifting schools in the Republic of Moldova; sociological questioning of weightlifting specialists; pedagogical observation, anthropometric research methods, etc., but the most representative method according to which the pedagogical experiment was carried out was the method of symmetrical exercise systems , which provided for the synchronization of physical exercises depending on the axes of the body, where the aim was to achieve an equal ratio of efforts on all sides and parts of the body performed in sagittal and transverse plane, and which can condition an ideal and proportional symmetry in the development of the athletes' body. Exercises were developed following the ways of approaching the action towards the interpretation of the weightlifting technique in classical competition events.

5. Results were obtained showing significant differences between the training level of the experimental and control group subjects at the final stage of the research. Thus, for example, when performing the push-up action with barbell fixation, which is characteristic of the anterior front axis, the subjects of the experimental group demonstrated an average of 37.0 kg, compared to 30.0 kg

demonstrated by the subjects of the control group, the differences being significant at the 5% self-efficacy threshold (P<0.05). In the exercises offered for the anterior front axis performed on the multifunctional apparatus, the following results are found: pulling on the helkometer: 48.5 kg for the experimental group and 37.0 for the control group (P<0.05); in the horizontal direction push from the medium grip sitting, the subjects of the experimental group demonstrate an average of 54.0 kg compared to 45.5 kg of the subjects of the control group.

The exercises in Module II performed for the back front axis show significant levels of P<0.05 in the upward push with barbell fixation from the weight-behind-the-head, medium grip position and in the extension bend from the weight-behind-the-head, overhead grip position. Here the final results are: 39.5 kg/record for the experimental group subjects, 32.0 for the control group subjects (exercise number 5) and: 39.0 compared to 31.5 in the sixth exercise.

It can be mentioned that the athletes of the experimental group, due to the exercises applied during the examination, were able to develop more pronounced the respective muscle groups, which provide the exercise actions for the posterior frontal axis. In such circumstances, a more pronounced development of the back triangle is also observed, which is characterized in the anthropometric indicators reported in chapter 3 of the paper.

6. The athletes of the experimental group continue to demonstrate significant results in the actions performed in Module III. According to the results obtained, there is a tendency to establish balanced proportions in the development between the upper and lower parts of the body. This is observed by statistical differences of P<0.05 in the exercises performed for the transverse versus front axis of the athletes' body. In exercise 14 the mean reaches 104.5 kg in the experimental group compared to 83.0 in the subjects of the control group: (P<0.001). This exercise, being performed with the barbell, gives assurance in the fact that the lower body training is suitable for weight lifting, which is also demonstrated in the competition participation.

7. Testing of anthropometric indices demonstrates statistically significant differences of P<0.01 - <0.001 in the determination of left- and right-hand strength in favour of experimental group subjects. This is due to working with intensity and proportional effort normalization in the exercise program proposed to the experimental group subjects. Testing of somatoscopic indices also shows statistically significant differences. In the postural examination, the experimental group subjects score an average of 9.3 points, compared to the control group subjects, who score an average of 8.5 points. Similar results are observed for the examination of the shoulder girdle (9.1 compared to 8.7 points); the examination of the triangle (8.8 compared to 8.2); and the inspection of the lower limbs (9.5 compared to 8.6 points).

8. All the forms of training foreseen in the experimental project were valuable. Still, the most representative are the forms of special physical training based on symmetrical exercise systems which, subordinated to the correctness of lifting weights, promoted the athletes towards another level of technical training, where significant results of preparation for this stage are observed. The athletes achieved an excellent body exterior in the sense of proportional development of sides and body parts that developed symmetrically, balanced and highlighted. These characteristics ensure a perfect mastery of the barbell during the lifting and overhead hold, which for the weightlifting event is most important.. ***

In order to achieve the objectives that determine the essence of the training of new-type weightlifters, as well as the opportunities that can condition this process, based on the results obtained from the study focused on the planning of the training process in beginner weightlifters **is recommended**:

- the training program of the beginner weightlifter must become a centralized mechanism in educating, training and preparing the athlete with an orientation towards a long period of time;
- for the creation, forming and training of a new type of weightlifting athlete, it is necessary to revise the training programs, based on the consideration of coherent planning of the training process, starting with the first stage: the initial training stage:
- by means of the planning elements it is necessary to include in the education of the new type of athlete a wider variety of training forms and activities that suit the age period, the purpose and objectives facing this period, as well as highlighting the essential elements , structure and content of the training programs, highlighting the anatomical-physiological and biological factor, which are the basis of a perspective and stable development from the point of view of the athlete's health, certain collaborative interactions between the forms of training, etc.,
- when planning the training process for the respective stage, it is recommended to include in the scheme of the training program symmetrical exercises from the very first training lessons (to focus on elements of correctness in performing the exercises from the start of the training process);
- it is recommended to make corrections to the athlete's diet, to complete the work agenda of the trainers with checks and medical checks in order to keep in view the permanent change in the conditions of the athletes, who are at a stage of abundant growth;
- it is recommended to supplement the technical staff with specialists from various fields related to the training interest of the prospective weightlifter.

Namely these recommendations and suggestions that can become regulatory tools in the centralized training of the weightlifting athlete, conditions that will change the vector of increasing results towards new performances.

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COZIMA MIHAIL,

List of scientific papers on the thesis topic

1. Specialized books

- 1. BUFTEA VICTOR, MANOLACHI VICTOR, **COZIMA MIHAIL – TEHNOLOGIA CONTROLULUI ȘI PLANIFICĂRII ÎN SPORTUL DE PERFORMANȚĂ. Monografie.** MEC, USEFS, AORM - Chișinău: S.n., 2021, (Valinex SRL), -290 p. ISBN 978-9975-68-444-6.

2. Articles in scientific journals

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- 2. ***Cozima Mihail.*** **DETERMINING THE LEVEL OF DEVELOPMENT OF WEIGHTLIFTERS IN THE EARLY STAGE BASED ON ANTHROPOMETRIC INDICATORS. (DETERMINAREA GRADULUI DE DEZVOLTARE A SPORTIVILOR HALTEROFILI LA ETAPA INCIPIENTĂ PE BAZA INDICILOR ANTROPOMETRICI).** În: Analele Universității Analele Universității „Ştefan cel Mare" din Suceava**.** Seria Educație Fizică și Sport Știința și arta mișcării **.**ISSN 2601 - 341X, ISSN 1844-9131**.** Suceava, 2023. Pp. 19-26
The Annals of the "Ştefan cel Mare" University of Suceava. Physical Education and Sport Section. The Science and Art of Movement eISSN 2601 - 341X, ISSN 1844-9131
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- 3. COZIMA MIHAIL - PLANIFICAREA PREGĂTIRII FIZICE A HALTEROFILILOR ÎNCEPĂTORI ÎNTR-UN MICROCICLU SĂPTĂMÂNAL DE ANTRENAMENT. European Congress - SPORTS, EDUCATION, CULTURE - Interdisciplinary Approaches in Scientific Research. The congress is supported by Dunarea de Jos University of Galati in collaboration with Fйdйration Internationaled'Йducation Physique and will take place in Galati, Romania, from 24 to 28 May 2023.www.fieps-seciasr.ugal.ro

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- 6. BUFTEA VICTOR, FERARU VALENTINA, **COZIMA MIHAIL - METODOLOGIA CERCETĂRII ȘTIINȚIFICE – COMPONENTĂ INDISPENSABILĂ A PREGĂTIRII PROFESIONALE A SPECIALIȘTILOR ÎN EDUCAȚIA FIZICĂ ȘI SPORT.** *Formarea continuă a specialistului de cultură fizică în conceptul acmeologic modern:* Materialele conferinţei ştiinţifice internaţionale, Ediţia II, 2 decembrie, 2021, *UNIVERSITATEA DE STAT DE EDUCAŢIE FIZICĂ ŞI SPORT, CATEDRA DE GIMNASTICA*. Republica Moldova – Chișinău: 2021. (Tipogr. "VALINEX"). Pag. 15-24. ISBN 978-9975-68-440-8.
- 7. ***BUFTEA VICTOR, BOEȘTEAN CONSATANTIN,*** *COZIMA MIHAIL***. ASPECTE TEHNOLOGICE DE PLANIFICARE SI ORGANIZARE A PREGĂTIRII GIMNASTELOR DE PERFORMANŢĂ PENTRU PARTICIPARE ÎN CONCURS PE DURATA UNUI CICLU ANUAL DE ANTRENAMENT.** *Technological aspects of planning and organizing the elite gymnasts' training process during annual training cycle.* Materialele Congresului Ştiinţific Internaţional, „SPORT. OLIMPISM. SĂNĂTATE", consacrat aniversării 70 a învățământului de cultură fizică din Republica Moldova și 30 ani de la fondarea USEFS.

Ediția VI, 16-18 septembrie 2021, Culegere de articole. Chișinău, USEFS, p.131-139, ISBN 978-9975-131-99-5.

- **8. COZIMA MIHAIL**, BUFTEA VICTOR, **PREGĂTIREA PROFESIONALĂ A ANTRENORILOR ÎN PROBA DE HALTERE: PLANIFICARE, CONȚINUT, COMPETENȚE. UNIVERSITATEA DE STAT DE EDUCAŢIE FIZICĂ ŞI SPORT DEPATAMENTUL SPORTURI DE LUPTE ŞI GIMNASTICĂ**. ***„FORMAREA CONTINUĂ A SPECIALISTULUI DE CULTURĂ FIZICĂ ÎN CONCEPTUL ACMEOLOGIC MODERN”.*** Materialele conferinţei stiinţifice cu participarea internaţională. 1 decembrie, 2022. Ediţia III. Chişinău, Republica Moldova. Chișinău. 2022. (Valinex). Pag.17-22.**ISBN 978-9975-68-473-6.** 1ORCID ID: https://orcid.org/0000-0002-0675-3543. e-mail: cozimamihai@gmail.com. 2ORCID ID: https://orcid.org/0000-0002-6231-1248. e-mail: bufteavictor@mail.ru

- **9. COZIMA MIHAIL.** REFLECȚII PRIVIND DEZVOLTAREA SPORTULUI CU HALTERE ÎN REPUBLICA MOLDOVA (SONDAJ SOCIOLOGIC). În: „PROBLEME ACTUALE ALE TEORIEI ŞI PRACTICII CULTURII FIZICE”: Conferinţa ştiinţifică a tinerilor cercetători cu participare internaţională. Chișinău: USEFS, 2023, p. 126-137.

ADNOTARE

Cozima Mihail: „Planificarea procesului de antrenament la sportivii halterofili la etapa incipientă". Teză de doctor în științe ale educației: Chișinău, 2023.

Structura tezei: introducere, 3 capitole, concluzii și recomandări, bibliografie din 218 titluri, 125 pagini text de bază, 11 anexe, 23 figuri, 19 tabele. Rezultatele obținute sunt publicate în 7 lucrări științifice.

Cuvinte-cheie: halterofili începători, proces de antrenament, macrociclu, etapă incipientă, planificare, sisteme simetrice, structură, volum, conținut.

Scopul lucrării: modernizarea formelor de planificare a procesului de antrenament al sportivilor halterofili începători în conformitate cu specificul sistemelor simetrice de îndeplinire a exercițiilor.

Obiectivele cercetării: 1. Studiu asupra abordărilor teoretico-științifice privind rolul formelor de planificare a procesului de antrenament în sportul cu haltere. 2. Elaborarea metodologiei experimentale de planificare a procesului de antrenament cu sportivii - halterofili la etapa incipientă pe baza sistemelor simetrice de exersare. 3. Aplicarea în practica procesului de antrenament a metodologiei experimentale elaborate: determinarea eficienței formelor de planificare - în structura unui macrociclu de doi ani de pregătire. 4. Argumentarea programului experimental privind coraportul rezultatelor obținute pe baza formelor de planificare bazate pe sistemele simetrice de exersare în cadrul procesului de antrenament cu sportivii halterofili la etapa incipientă.

Noutatea și originalitatea științifică sunt determinare de elementele de creativitate prin elaborarea formelor de planificare a procesului de antrenament la etapa inițială, prin care, acțiunile de pregătire intră în coincidență deplină cu specificul probei și cu vârsta sportivilor. Elaborarea sistemelor simetrice de exersare reprezintă elementele de originalitate ale acestui studiu, prin care s-a urmărit dezvoltarea unui corp proporțional, balansat și simetric prin aplicarea exercițiilor speciale în axul frontal, sagital și transversal, ceea ce este deosebit de important pentru stabilitatea halterei în timpul ridicării și fixării acesteia deasupra capului.

Rezultatele obținute care contribuie la soluționarea unei probleme ştiinţifice importante: planificarea procesului de antrenament la etapa de inițiere în sportul cu haltere, bazată pe aplicarea sistemelor simetrice de exersare, care reprezintă principalul element al pregătirii centralizate în perioada de dezvoltare intensivă a tânărului sportiv, vor conduce la o dezvoltare simetrică și balansată a părților și laturilor corpului, fapt ce va permite îndeplinirea de către sportivi a eforturilor de antrenament conform potențialului bio-psiho-motrice necesar în cadrul etapei de specializare aprofundată și, implicit, la obținerea performanțelor înalte.

Semnificaţia teoretică relevă importanța conceptuală a ideilor și teoriilor care prevăd formele de planificare a procesului de antrenament în cadrul etapei de inițiere, ca factor primordial la întemeierea procesului pe bază de sistem, care începe cu o planificare amplificată și prin care sunt trasate toate obiectivele de activitate. Acestea pot fi interpretate ca: planuri, programe, proiecte, fișe, scheme, protocoale, grafice etc., care pot servi drept material didactico-metodic și de orientare spre o bună organizare a procesului de antrenament la toate etapele de pregătire și pot influența direct obținerea rezultatelor sportive dorite.

Valoarea aplicativă a cercetării constă în creșterea eficacității procesului de pregătire a halterofililor începători prin aplicarea sistemului de planificare secvențială a eforturilor de antrenament, bazat pe aplicarea sistemelor simetrice de exersare, care va face posibilă rezolvarea eficientă a sarcinilor de antrenament în etapele ulterioare ale pregătirii multianuale și, ca urmare, obținerea rezultatelor sportive de anvergură, fără a forța procesul de antrenament.

Implementarea rezultatelor ştiinţifice a vizat implementarea programului experimental în cadrul etapei incipiente a procesului de antrenament cu sportivii halterofili. Bazată pe forme specifice de planificare a procesului de antrenament conform sistemelor simetrice de exersare, abordarea experimentală a contribuit la raționalizarea structurii și conținutului pregătirii pe durata perioadei de doi ani de antrenare. Unele produse ale rezultatelor sunt prezentate în diverse materiale publicate: monografie, articole științifice, rapoarte în cadrul conferințelor științifice internaționale. O parte dintre aceste inovații au fost extinse în cadrul procesului de antrenament în școlile sportive specializate de haltere ale republicii, inclusiv: Liceul Republican cu profil sportiv, Chișinău: Liceul internat municipal cu profil sportiv; Chișinău: Școala sportivă B.P.Petuhov din Bălți, școlile sportive specializate de haltere din Nisporeni, Cahul, Comrat, Ungheni, Unțești, Sîngerei.

АННОТАЦИЯ

Козима Михаил: „Планирование тренировочного процесса спортсменов-тяжелоатлетов на начальном этапе". Докторская диссертация в области педагогических наук: Кишинев, 2023 г.

Структура диссертации: введение, 3 главы, общие выводы и рекомендации, библиография из 218 наименований, 125 страниц основного текста, 11 приложений, 23 рисунка, 19 таблицы. Результаты работы опубликованы в 7 научных статьях.

Ключевые слова: начинающие тяжелоатлеты, тренировочный процесс, макроцикл, начальный этап, планирование, симметричные системы, структура, объем, содержание.

Цель работы: модернизация форм планирования тренировочного процесса у начинающих спортсменов-тяжелоатлетов в соответствии со спецификой системы симетричности выполнения упражнений.

Задачи исследования*:* 1. Исследование теоретико-научных роли форм планирования тренировочного процесса в тяжелой атлетике. 2. Разработка экспериментальной методики планирования тренировочного процесса со спортсменами - тяжелоатлетами на этапе начальной подготовки, на основе симметричной системе подготовки. 3. Применение разработанной экспериментальной методики тренировочного процесса на практике: определение эффективности форм планирования в структуре двухлетнего макроцикла подготовки. 4. Обоснование экспериментальной программы на основе форм симметричной системе подготовки включеннцх в планировании тренировочного процесса с тяжелоатлетами на начальном этапе.

Научная новизна и оригинальность определяются элементами разработки форм планирования тренировочной деятельности на начальном этапе, при которых, тренировочные действия полностью совпадают со спецификой соревнований и возрастом спортсменов. Оригинальность данного исследования заключается в разработке симметричных тренировочных систем, направленных на развитие пропорционального, сбалансированного и симметричного тела путем применения специальных упражнений по фронтальной, сагиттальной и поперечной оси, что особенно важно для устойчивости штанги при подъеме и фиксации ее над головой.

Полученные результаты, способствующие решению важной научной проблемы высокой значимости: планирование тренировочного процесса тяжелоатлетов на начальном этапе подготовки, основанное на применении симметричных систем выполнения упражнений, которые являются основным элементом централизованной подготовки в период интенсивного развития молодого спортсмена, приведет к симметричному и сбалансированному развитию частей и сторон тела, что позволит спортсменам выполнять тренировочные нагрузки в соответствии с био-психомоторным потенциалом, необходимым на этапе углубленной специализации и, как результат, к достижению ими высоких результатов.

Теоретическая значимость раскрывает концептуальную важность идей и теорий, предусматривающих формы планирования тренировочной деятельности на начальном этапе как основного фактора в формировании системного процесса, который начинается с усиленного планирования и посредством которого все цели деятельности отображаются в рамках наиболее логичных рабочих сценариев. Это могут быть: планы, программы, проекты, ведомости, схемы, протоколы, графики и т.д., которые могут служить дидактико-методическим материалом и руководством для правильной организации тренировочного процесса на всех этапах подготовки и непосредственно обуславливать достижение желаемых спортивных результатов.

Прикладное значение исследования заключается в повышение эффективности тренировочного процесса с начинающими спортсменами-тяжелоатлетами путем внедрениея системы последовательного планирования тренировочных нагрузок на основе применения симметричных систем выполнения упражнений, что даст возможность эффективного решения тренировочных задач на последующих этапах многолетней подготовки и, как следствие, получения высоких спортивных результатов, не форсируя тренировочный процесс.

Внедрение научных результатов в практику. Разработанная экспериментальная программа подготовки спортсменов-тяжелоатлетов на начальном этапе была внедрена в тренировочный процесс специализированных спортивных школ по тяжелой атлетике Республики Молдова. Основанный на специфических формах планирования тренировочной деятельности и симметричных системах тренировки, экспериментальный подход способствовал рационализации тренировочных действий в течение двухлетнего макроцикла, а отдельные результаты представлены в различных опубликованных материалах: монографиях, научных статьях, презентациях и докладов на международных научных конференциях. Применяемая методология нашла положительный отклик у тренеров по тяжелой атлетике и спортсменов республики, а некоторые из этих инноваций были распространены в рамках тренировочного процесса *в специализированных школах тяжелой атлетики гю* Chișinău, Bălți, Nisporeni, Cahul, Comrat, Ungheni, Unțești, Sîngerei.

ANNOTATION

Cozima Mihail: " Planning the weightlifters training process at the initial stage ". PhD thesis in education sciences: Chisinau, 2023.

Thesis structure: introduction, 3 chapters, general conclusions and recommendations, references 218 titles, 125 pages of main text, 11 appendices, 23 figures, 19 tables. The results are published in 7 scientific papers.

Keywords: beginner weightlifters, training process, macrocycle, initial stage, planning, symmetrical systems, structure, volume, content.

The purpose of research: lies in the modernization of the planning forms of the beginner weightlifters training process in accordance with the specifics of the symmetrical systems of performing exercises.

Research objectives.

1. Study on theoretical-scientific approaches regarding the role of planning forms of the training process in weightlifting. 2. Development of the experimental methodology for planning the weightlifters training process at the initial stage based on symmetrical training systems.3. The practical application of the developed experimental methodology to the training process: determining the efficiency of planning forms - in the structure of a two-year training macrocycle. 4. Argumentation of the experimental program regarding the correlation of the results obtained on the basis of the forms of planning based on the symmetrical exercise systems in the training process with weightlifters at the initial stage.

Scientific novelty and originality are determined by the elements of creativity by elaborating the forms of planning the training process at the initial stage, through which the preparation actions fully coincide with the specifics of the event and the age of the athletes. The development of symmetrical exercise systems represents the original elements of this study, which aimed to develop a proportional, balanced and symmetrical body by applying special exercises in the frontal, sagittal and transverse axis, which is particularly important for the stability of the barbell during lifting and fixing it above the head.

The results obtained that contribute to solving the important scientific problem: planning the training process at the early stage in weightlifting, based on the application of symmetrical training systems, which is the main element of centralized training during the period of intensive development of the young athlete. These led to a symmetrical and balanced development of the parts and sides of the body, which allowed the athletes to perform the required training efforts.

The theoretical significance reveals the conceptual importance of the ideas and theories that provide for the forms of planning the training process in the early stage, as a primary factor in the foundation of the system-based process, which begins with an expanded planning and through which all activity objectives are drawn. These can be interpreted as: plans, programs, projects, sheets, schemes, protocols, graphs, etc., which can serve as didactic-methodical material and orientation towards a good organization of the training process in all stages and can influence directly the achievement of desired sports results.

Applicative value of the research consists in increasing the effectiveness of the training process of beginner weightlifters by applying the system of sequential planning of training efforts, based on the application of symmetrical training systems, which will make it possible to effectively solve training tasks in the subsequent stages of multi-year training , namely achieving wide sports results, without forcing the training process.

Implementation of scientific results , aimed to implement the experimental program developed during the initial stage of the training process with weightlifters. Based on specific forms of planning the training process and symmetrical training systems, the experimental approach contributed to the rationalization of the structure and content of the training during the two-year period. Some products of the results are presented in various published materials: monograph, scientific articles, reports in international scientific conferences. Some of these innovations were extended within the training process in specialized weightlifting sports school of the republic, including: Republican High School with sports profile, Chisinau: Municipal boarding high school with sports profile; Chisinau: B.P.Petuhov Sports School in Balti, specialized weightlifting sports schools in Nisporeni, Cahul, Comrat, Ungheni, Untesti, Singerei.

COZIMA MIHAIL

PLANNING THE WEIGHTLIFTERS TRAINING PROCESS AT THE INITIAL STAGE

Specialty 533.04 – Physical education, sports, kinetotherapy and recreation

Summary

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