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PHYSICAL REHABILITATION OF FUNCTIONAL VIOLATIONS AND DEFORMATIONS OF CHILDREN FOOT

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Annotation. *Purpose*: To substantiate a comprehensive methodology for physical rehabilitation of children with functional disorder "hollow foot" in the initial stages of its development. *Material*: The study involved 58 children aged 8-14 years with the disorder and deformities of the lower extremities. *Results*: The changes after six months of targeting funds to rehabilitate musculoskeletal structures of the musculoskeletal system of experimental and control groups of children. The technique of rehabilitation, including: implementation of a specially designed set of corrective exercises, wearing special orthopedic individual insoles, foot massage and calf muscles, electro-stimulation effects on the musculoskeletal structure of the foot and lower leg dynamics. *Conclusions*: "hollow foot" is the least studied morphofunctional disorder; developed technique of physical rehabilitation for positive changes in the condition of the musculoskeletal system in children of the main group, the lack of specific rehabilitation interventions during the initial stages of the "hollow foot" leads to the aggravation of the disorder.
Keywords: musculoskeletal, apparatus, disorders, hollow foot, children, physical, rehabilitation.

Introduction

Different morphofunctional feet disorders are known among which more frequent than all met the omission of longitudinal and transversal arches, that is flat-foot, means varus or valgus foot deformation, flat-foot is deformation by which a foot turns inside, i.e. in position of supination and in position of the sole bending and adduction; and other foot deformations to which other combinations of the above-stated disorders are inherent. [1, 2, 3, 4].

A hollow foot is a type of cyllosis, a physical rehabilitation of which is the least studied and causes many contradictions. For a hollow foot the increase of hogging of longitudinal foot arch is characteristic and at the expressed forms of deformation its middle part does not touch footstep, but at exertion it leans against a heel hillock and on the heads of metatarsus bones [4, 5, 6].The area of footstep diminishes due to it, that results in the increase of exertion on supporting parts of foot and as a result overstrain and deformation of musculoskeletel structures appear, the function of equilibrium and stability gets worse as a result, and gait becomes sickly and dissymmetric. In the neglected cases deformation is fixed; retracted soft fabrics of sole, sole aponeurosis and even skin fix the pathological setting of foot. In not neglected cases, if to press on the head of the first metatarsus bone from below, the concavity of vault disappears and a foot looks normal. The same smoothing of vaults originates from pressure of weight of body at leaning on a foot. If to raise a foot, deformation appears again.

In children deformation is so poorly expressed, that at examination it is often not recognized. There is a typical sign of hollow foot, which appears in children: at the attempt of child to unbend a foot and set it in position of the back bending fingers acquire a claw-shaped form. On the early stages of deformation an imprint of sole is normal, and sometimes it looks even like an imprint of a flat foot. Later on an imprint expansions of footing surface under the head of the first, metatarsus bone and narrowing of footing surface of external edge show up in the middle part. Then the increase of curvature of foot vault results in that its external edge disappears in the middle part of imprint. When the unbent fingers acquire a claw-shaped form, and a foot is fixed in the sole bending, finger-prints disappear and the area of heel imprint diminishes.

A youth hollow foot is observed often simultaneously with splitting arches of sacrolumbar region of spine. It develops gradually, noticeably makes progress in the period of the most growth, in age from 8 to 15 year old [5]. The changes of the morphofunctional state of foot result in violations of the state of all locomotor system. Different deformations of spine appear, knee-joints, shortening of one lower extremity, that considerably violates a carriage and have an adverse effect on physical development of a child [8, 10, 14, 16].

For the correction of above-said disorders different rehabilitation methods, fitness programs and technical means, are recommended [2, 4, 11, 12, 13, 15]. However, in respect of hollow foot that is substantial disorder, the method of its rehabilitation is not developed practically and requires a further study and additional researches.

Work is executed in accordance with the plan of scientific researches of the National technical university of Ukraine «KPI».

Purpose, tasks of the work, material and methods

A research purpose is a ground and development of complex method of physical rehabilitation of children with functional disorder «hollow foot» on the initial stages of its development.

Materials and methods. 58 children of 8-14 years old took part in research on age-dependent gradation in accordance with the methods of inspection. Two groups were formed: basic and control one in amount of 30 and 28 persons accordingly. An inspection was conducted together with a doctor-orthopedist in the specialized center of orthopedics help with the use of analysis of ink imprints feet (method of plantografy), sciagraphy pictures (method of sciagraphy), and also visual examination with measuring of valgus and varus deformation of heels in degrees, sizes of

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shortening of lower extremities in mm, by determination of kind and degree of deformation of spine, knee-joints and fingers of foot, registration of cases of cramps and pains. For all children a hollow foot was diagnosed on the initial stage of development or the indirect signs of hollow foot took place (pain, cramps in muscles). Majority of children also had signs of flatfoot – flattening of foot vaults. Different morphofunctional feet disorders are known among which more frequent than all met fallen longitudinal and transversal arches, that is flat-foot, means varus or valgus talipes, flat-foot is deformation by which a foot turns inside, i.e. in position of supination and in position of the sole bending and adduction; and other feet deformations to which

Research was conducted during 6 months. In a control group during this period children executed exercises with the use of the generally accepted complexes for forming a correct foot and prophylaxis of flatfoot.

In a basic group for the correction of violations of locomotor system the author method of rehabilitation was executed. It was included:

1. implementation of the specially developed complex of correcting exercises for the rehabilitation of hollow foot taking into account the features of this disorder (2 courses for 18 classes with the pause of 2 months between courses);
2. carrying of the special orthopedic individual insoles, made from the foam polyethylene with enhanced elasticity, resiliency and perfection of letups under a hollow foot (used during all course of rehabilitation);
3. massage feet and gastrocnemius muscles (2 courses for 10 sessions during 6 months), and also daily self-massage of feet (in a that period, when the sessions of massage were not executed by a specialist);
4. electrostimulative affection on musculoskeletal structures of foot and shin in a dynamics. The examinees executed physical exercise in a sitting position on a chair - in turn by a right and left foot (by the sole surface of a foot), carried out circular rotations forward-back on the floor of the special skating trainer-rink, on the working surface of which, a water-wet electrode, executed from soft porous material, was dressed. The working surface of skating rink, which sole part of foot moved on, simultaneously revolving a skating rink, was executed as a cone and it didn't contact with the floor. The second electrode was fixed by a rubber bandage on-the-spot shin. Electrostimulative influence during the reduction of muscular structures of shin and foot was produced by the source of impulses of electric current – «Mioritm». During a 6-monthly period, 2 courses of 12 sessions for 20 minutes (in a day) were conducted [2].

Measurings of the state of locomotor system were conducted before the beginning of research, and also after each of the stages of rehabilitation. The levels of distinctions processed and compared findings between initial and eventual indexes.

Research results.

After the arranging of rehabilitation influences on the children of basic group the considerable changes of the morphofunctional state of musculoskeletal structures of foot are marked, shin, talocrural and knee joints, spine, which are presented in the table 1.

Table 1.

Changes of the morphofunctional state of locomotor system in the basic group of children from 8 do14 years old. (n=30)

Types of violations and strains			**Before applying the corrective action, the number of cases**		**After applying the corrective action, the number of cases**	
Longitudinal arches			30		23	
Transverse arches			29		29	
1			2		3	
Valgus heel		On 1°-5°	9		16	
		On 6°-10°	10		2	
		On11°-15°	1		0	
		On 16°-20°	6		0	
		On 21°-25°	0		0	
		On 35°-40°	1		0	
Varus heel		On 1°-5°	0		1	
		On 6°-10°	2		0	
Hammer toes			26		22	
fan-shaped fingers			1		0	
Deviation of the 1st toe			1		0	
			left	right	left	right
Shortening of the lower limb	Free lower limb	1-3 mm	1	4	1	2
		4-5 mm	3	5	3	0
		6-10 mm	3	2	0	2

Types of violations and strains			Before applying the corrective action, the number of cases		After applying the corrective action, the number of cases	
		> 10 mm	4	1	2	0
	no		2		16	
	semi - pelvis	1-3 mm	2	3	2	0
		4-5 mm	8	0	1	0
		6-10 mm	4	0	1	0
		> 10 mm	1	0	0	0
Gonycampsis		X-vivid	4		0	
		O-vivid	1		1	
Scoliosis		C-vivid	17		9	
		S-vivid	2		0	
Bringing forefoot					8	
Pain in the leg muscles					3	
Convulsions	In the calf muscles		16		0	
	In toes		8		1	
Area of support legs on plantorgramme	less than normal	On 6-10%	0	0	1	0
		On 11-20%	1	2	3	3
		On 21-30%	2	4	2	0
		On 31-40%	2	4	1	4
		On 41-50%	5	2	3	4
		On 51-60%	3	3	6	5
		On 61-70%	2	3	4	3
		On 71-80%	3	3	4	8
		On 81-90%	0	0	1	0
		On 91-100%	7	5	4	1
	Norm		5	4	1	2
	Overweight		0	0	0	0
Feet condition on the radiograph		Norm	1	0	17	14
		I degree	22	21	10	13
		II degree	7	9	1	1
		III degree	0	0	0	0

We suppose less correct grant of research results as average digital datas, because for every child the individual complex of signs and degree of deformity of musculoskeletal structure of foot, shin, knees and spine were identified, thus these changes were fixed both toward an increase and diminishing from a norm. Therefore, we bring these changes over of the morphofunctional state of foot, shin, knees and spine in the expanded form, using such universal data as an amount of the set cases of one or another type of violations or deformations of locomotor system at the examined children before and after the arranging of correcting influences.

The changes of the state of locomotor system are fixed almost in all links. The improvement of the state of longitudinal vaults of foot is marked. From data of sciagraphy from 30 children with the first and second degree of flatfoot after a rehabilitation period 1 child left with the second degree of flatfoot, 10 children (left foot) and 13 children (right foot) – with the 1st degree, 17 children with deformation of the left leg, and 14 children with deformation of right foot got it settled into a shape.

19 children got the degree of deformation of talocrural joints diminished, and 10 children got it settled into a shape (out of 30 children with valgus and varus deformation of heel). The amount of children diminished with hammer, by fan-shaped toe and with the rejection of the first toe, the state of knees (X-vivid deformations are corrected) and spine became better (the cases of children scoliosis decreased twice). Before application of correcting influences only 2 out of 30 children from the experimental group didn't have a shortening of free lower extremity, while after completion of six-month period of rehabilitation already 16 from 30 children got the shortening disappeared. 13 out of 23 children had the diminishing of size of shortening of lower extremity and 14 out of 18 children got the diminishing of deformation of semipelvis. A tendency was set to the increase of footing area of the middle part for children who had datas of the diminished footing area. And the most important – most children didn't feel pain in the muscles of feet (22 out of 25children), cramps in the gastrocnemius muscles of shin (16 out of 16 children), cramps in tiptoes (7 out of 8 children), that testifies the considerable improvement of the functional state of locomotor system. At the same time, children from the control group did not overcome the violation and deformation of musculoskeletal structures of foot,

shin, talocrural and knee joints, spine (table. 2), but even negative changes are fixed – the amount of children who began to feel the pain in feet, cramp, in shins and tiptoes was increased. The amount of cases of appearance of hammer toe was increased, the state of spine of some children became worse, for example, for the child Sergey A. C-vivid scoliosis became S-vivid. Most children from the control group got the footing area diminished, it talks about a tendency of forming the disorder of a hollow foot.

Comparison of inspection results was rotined by the noticeable improvement of the morphofunctional state of locomotor system of children from the basic group, while a proof tendency was set to its worsening for the children from the control group, that testifies to efficiency of the offered complex author method of rehabilitation of violations and deformations of locomotor system and, in particular, such morphofunctional disorder as a hollow foot.

Table 2.

Changes of the morphofunctional state of locomotor system in the control group of children from 8 do14 years old (n=28)

Types of violations and strains			**Before applying the corrective action, the number of cases**		**After applying the corrective action, the number of cases**	
Longitudinal arches			28		28	
Transverse arches			24		24	
1			2		3	
Valgus heel		On 1°-5°	10		11	
		On 6°-10°	9		11	
		On11°-15°	3		4	
		On 16°-20°	1		1	
		On 21°-25°	-		-	
		On 35°-40°	-		-	
Varus heel		On 1°-5°	4		4	
		On 6°-10°	-		-	
Hammer toes					27	
fan-shaped fingers					-	
Deviation of the 1st toe					2	
			left	right	left	right
Shortening of the lower limb	Free lower limb	1-3 mm	5	7	4	7
		4-5 mm	1	2	2	2
		6-10 mm	6	2	5	3
		> 10 mm	-	-	1	-
	no				1	
	semi - pelvis	1-3 mm	7	8	9	6
		4-5 mm	2	0	1	1
		6-10 mm	1	0	2	1
		> 10 mm	-	-	-	-
Gonycampsis		X-vivid	6		7	
		O-vivid	3		3	
Scoliosis		C-vivid	12		16	
		S-vivid	-		1	
Bringing forefoot			18		18	
Pain in the leg muscles			18		23	
Convulsions	In the calf muscles		12		15	
	In toes		7		9	
Area of support legs on plantorgramme	less than normal	On 6-10%	2	2	2	1
		On 11-20%	10	6	11	3
		On 21-30%	7	7	8	5
		On 31-40%	1	6	2	7
		On 41-50%	1	1	2	3
		On 51-60%	3	1	6	2
		On 61-70%	-	1	1	2
		On 71-80%	-	-	1	-
		On 81-90%	-	-	-	-

Types of violations and strains			Before applying the corrective action, the number of cases		After applying the corrective action, the number of cases	
		On 91-100%	-	-	1	2
	Norm			3	1	3
	Overweight		3	2	1	0
Feet condition on the radiograph		Norm	-	2	-	1
		I degree	22	20	21	21
		II degree	5	5	6	5
		III degree	1	1	1	1

Conclusions

1. The research conducted by us allows to describe a hollow foot, as type of morphofunctional disorder a physical rehabilitation of which is the least studied and causes many contradictions.
2. Developed by us complex method of physical rehabilitation of people with violations and deformations of locomotor system and, in particular with such functional disorder as a hollow foot, resulted in the positive changes in the morphofunctional state of musculoskeletal structures of foot, shin, talocrural and knee joints, spine of children from the basic group.
3. Absence of the special rehabilitation measures at the initial stages of hollow foot results in aggravating of this disorder and increase of amount of children with pain in the muscles of feet, by cramps in gastrocnemius muscles and fingers.

The prospects of further study of morphofunctional disorders of foot will be realized in development of more perfect methods of diagnostics and more effective facilities of rehabilitation.

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TECHNICAL TRAINING OF QUALIFIED ATHLETES , SPECIALIZING IN THE HIGH JUMP WITH A RUNNING START, WITH ADDITIONAL FUNDS

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Annotation. *Purpose*: To improve the process of technical training of qualified athletes, specializing in the high jump with a running start on the basis of additional funds. *Material*: The study involved 12 athletes qualified I sports category and candidate masters age 18-20 years. Number of attempts varied from 12-15, depending on the degree of fatigue study. Determined the effect of electrical stimulation on muscle groups leading the kinematic and dynamic characteristics of the runway and repulsion, as well as athletic performance. *Results*: It was established that the integrated use of electrical stimulation affects more effectively to improve the biomechanical characteristics of high jump and effectiveness than using electrical stimulation during takeoff and repulsion separately. *Conclusions*: On the basis of the experimental data we can recommend the use of complex electrical, as an additional means for improving technical skills and improve performance athletes qualified.
Keywords: improvement, electrical, effectiveness, coordination, efficiency, biomechanics.

Introduction

Modern stage of elite sports' development, which is characterized by high sport results and constantly growing competition an international level, requires from sport scientists creative re-understanding of all complex of used, as on to-day, means and methods of sport training, as well as working out and foundation of training process's rationalization, which would ensure quicker and reliable achievement of high sport results.

Demand in development and implementation of new methods of movements' mastering is connected with the fact that increasing of trainings' scopes and intensity as on today can not be regarded as main ways to achievement of high sport results as far as increasing of load can not be unlimited [1, 2, 6, 7, 10].

Rising of effectiveness of qualified sportswomen's, who specialize in high running jumps, training process recent years has been realizing in two main directions. First – objectively grounded selection of training means and methods and their application, ensuring targeted influence on nervous-muscular system, seeking of criteria of sport techniques' effectiveness on the base of detail analysis of bio-mechanical structure of movements [4, 5, 8, 10].

In the base of other direction there is application of additional means in the process of sport training, videlicet: means of indication of movements' parameters and analysis of received information directly during training process, application of specialized simulators, permitting simulate and program interaction of sportswomen with external influences. This direction attracts more and more attention of researchers [2, 3, 5, 8–10]. It is explained by presence of significant reserves, which are manifested with application of additional means, oriented on guiding of sportswomen to higher results at the account of artificial conditions for simulation of sport exercises.

Among methods of creation of artificial conditions, permitting to program movement from the side of its inner content, the most perspective is considered to be method of artificial activation of muscles (electric stimulation) directly in the process of sport exercise. Here it is necessary to underline just that fact that electric activation of muscles if realized directly in sport movement, i.e., when stimulated muscles manifest natural tension.

The research has been fulfilled in compliance with topic 2.3.5.1п "Improvement of theoretical-methodic principles of sportsmen training system's management in speed-power kinds of sports" of combined plan of scientific-research work in sphere of physical culture and sports for 2006-2010 of Ministry of Ukraine of family, youth and sports (state registration number 0108U008210), and according to topic 2.11 "Theoretical-methodic principles of management of sportswomen's training in track and field jumps" of combined plan of scientific-research work in sphere of physical culture and sports for 2011-2015 of Ministry of Ukraine of family, youth and sports (state registration number 0111U003839).

Purpose, tasks of the work, material and methods

The purpose of the work is to improve the process of technical training of qualified sportswomen, who specialize in high running jumps on the base of additional means.

In compliance with the task of the research we determined influence of electric stimulation of main muscular groups, which participate in high jumps, on kinematic and dynamic characteristics of running and pushing off as well as on sport result. 12 qualified sportswomen of 1st sport grade and candidate masters of sports of 18-20 years old age took part in the research. Quantity of attempts varied within 12-15, depending on tiredness of the tested. Electric stimulation signals were emitted by stimulator with output signal of decaying shape. The value of impulse was selected for every sportswoman individually. Methodic of electrodes' application was bipolar.

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Automatic signals' feeding to muscles with the help of PC was realized in the moment of foot's contac6t with support. Relays P_1 or P_2 switched on turn by turn from contact sensors embedded in sportswomen's sport shoes. Contacts of these relays controlled impulses feeding to muscles, consequently to both feet.

Starting of electric stimulator with pushing off was realized by several ways:

– first method – in place of pushing off there was located one of contacts of external stimulator's switching on and other contact – on sole of sportswoman's shoeп. With such electric stimulator's work there was set required pause between "start" and signal's "outcome", which permitted for coach to start telemetric electric stimulator on his own, at required, in his opinion, moment.

– Other method – starting of electric stimulator from strain gauge platform, located in place of pushing off. The platform was connected with PC and with reaching of the set value of vertical component of effort, it started operation relay unit for switching electric stimulator on.

Thus, in our research we used complex of apparatus and instrumentation, which permitted to register kinematic characteristics of running, dynamic characteristics of pushing off (strain gauge platform) and process vertical component of effort with the help of PC and switch electric stimulator on.

Results of the research

In table 1 we present data of bio-mechanical characteristics of high running jumps with complex application of electric stimulation during technical training of qualified sportswomen and after effects.

Table 1

Influence of complex application of electric stimulation on bio-dynamic characteristics of high jump (with mathematical analysis) n = 12

Parameters		$\bar{X}$	%	$\bar{X} \pm m$	σ	t	P
Vertical strike effort, kg	OD	301.7	100	301.7 ± 6.5	21.5	–	–
	CA	163.3	54.1	163.3 ± 10.3	34.2	11.34	< 0.001
	AF	217.5	72.1	217.5 ± 10.9	36.1	6.64	< 0.001
Vertical effort of active push off, kg	OD	85.0	100	85.0 ± 2.9	9.6	–	–
	CA	152.5	179.4	152.5 ± 3.7	12.3	14.34	< 0.001
	AF	122.5	144.1	122.5 ± 4.6	15.3	6.88	< 0.001
Horizontal strike effort, kg	OD	85.0	100	85.0 ± 4.2	13.8	–	–
	CA	44.2	52.0	44.2 ± 3.1	10.4	7.83	< 0.001
	AF	55.8	65.7	55.8 ± 3.6	11.9	5.30	< 0.001
Horizontal effort of active push off, kg	OD	58.3	100	58.3 ± 2.4	8.0	–	–
	CA	31.7	54.3	31.7 ± 1.7	5.5	9.10	< 0.001
	AF	40.0	68.6	40.0 ± 2.1	7.1	5.70	< 0.001
Duration of pushing off, m.sec.	OD	240.0	100	240.0 ± 2.8	9.1	–	–
	CA	167.5	69.8	167.5 ± 3.5	11.6	16.26	< 0.001
	AF	193.3	80.6	193,3 ±3,1	10.3	11.26	< 0.001
Angle of gravity center taking off, degrees	OD	52	100	52 ± 1.9	6.5	–	–
	CA	61	117	61 ± 3.0	1.7	10.37	< 0.001
	AF	58	111	58 ± 2.3	1.5	8.60	< 0.001
Speed of gravity center taking off, degrees $m \cdot sec^{-1}$	OD	3.6	100	3.6 ± 1.5	0.01	–	–
	CA	4.8	133	4.8 ± 1.2	0.03	17.98	< 0.001
	AF	4.2	119	4.2 ± 1.5	0.02	9.84	< 0.001
Height of gravity center taking off, cm	OD	52.1	100	52.1 ± 0.2	0.6	–	–
	CA	62.6	120.2	62.6 ± 0.4	1.3	23.73	< 0.001
	AF	58.3	112.0	58.3 ± 0.4	1.2	14.79	< 0.001

Notes: OD– output data; CA– complex application of electric stimulator; AF– after effects.

As it is seen from the table above the highest change in percentage was, during electric stimulation influence, in indicators of pushing off duration. Duration of pushing off reduced in average by 30,2% in group. With it, speed of general gravity center's taking off increased by 33%, angle of gravity center's taking off – by 17% and sport result – by 6.1% that is witnessed by data in table 1.

Positive influence of complex application of electric stimulation was registered not only during its using but existed for certain period as after effects. I.e. after electric stimulation in 5-6 attempts all mentioned above indicators were higher than in ordinary conditions (see table 1).

Thus, results of the researches witness that complex application of electric stimulation more effectively influences on improvement of bio-mechanical characteristics of high jump than application of electric stimulation in running and separately at pushing off. Besides, complex application of electric stimulation results in musch higher increasing of efficiency.

Results of our researches also proved that among probable ways of improvement of qualified high running jumps sportswomen's training process it is not promising to hope only on increasing of loads' scope and

trainings' intensity. Great attention of coaches and sport scientists is attracted by prospects of application of technical aids, which can ensure more effective achievement of high results.

Attention to this direction is explained by presence of significant reserves, which can be realized with the help of additional means, by creating of artificial conditions.

Among methods, permitting to build movement on the base of its inner content the most perspective is application of artificial stimulation of muscles directly in the process of high running jump.

Experimental material witness that application of additional means is accompanied not only by improvement of bio-kinematic characteristics of running and bio-dynamic parameters of pushing off with high jump, but by clearly expressed after effects, which is maintained during several next trainings.

Positive influence of additional means on sportswomen's technical level and sport results is determined by the fact that they facilitate arranging of inter-muscular coordination at the account of limitation of action's intensity of muscles, which are not required in high jump as well as on the account of reducing of irrational movements' trajectories.

Conclusions:

Thus, on the base of all experimental data, obtained in our researches we can recommend complex application of muscles' electric stimulation as an additional mean for improvement of sportsmanship and increasing of efficiency of qualified sportswomen, who specialize in high running jumps.

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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.

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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 id 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 cylces, 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 pf 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 fore 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; psycho-dynamic; 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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APPLIED PROBLEMS OF PHYSICAL EDUCATION STUDENTS OF ECONOMIC SPECIALTIES

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Annotation. *Purpose*: to analyze the problems of physical education students of economics in the context of professionally applied physical training. *Material*: analysis of Ukrainian and foreign publications on species means of improving professional-applied physical training of students in higher education. *Results*: It was found that the state system of physical education students is ineffective. It does not provide psychophysical and professional readiness of graduates for productive activities and later life. The system also needs constant improvement. A new approach to solving the problem of training to learn the adoption of practical importance of physical education. Also the formation of motivation by demonstrating a real need and usefulness of the proposed exercise. Such exercises should be differentiated, taking into account the health status and subsequent career expectations. Conclusion: it is proved that for an efficient system of training is necessary to use popular among students sports. It is also necessary to take into account the interests of students when choosing tools professionally applied physical training.
Keywords: *physical, education, students, professionally applied, training, technology.*

Introduction

The necessity of reforming the education system of Ukraine, its development, quality improvements come to the fore in the modern context of Ukraine integration into the European system of higher education. Reasoning from this fact, the strategic task of reforming the higher education in Ukraine is the transformation of quantitative indicators of educational services into the qualitative ones; this provides the review of the content of higher education and filling it with new materials, introduction of modern methods of teaching. However, the urgent need is to increase students' interest in the quality of education, encouraging each student to take an active cognitive activity on the basis of strengthening the role of the educational-research and scientific-research work [1, 2, 11]. A number of authors (A.I.Drachuk, 2001; S.M. Kanishevskyi, 2008; M.D. Zubalii, 2008; T.Yu. Krutsevych, O.I. Podlesnyi, 2008; N.I. Turchina, 2009) have noted that current organization of physical education in higher educational institutions is not effective enough to improve the physical fitness, health, motivation, professionally important physiological traits and interests to exercises and sports of a significant number of students. An additional point is that physical training does not perform in full even health-improving function. Particular importance in recent years is paid to professionally applied physical training (PAPT), which, as a separate section of the course of students' physical education, is the link that connects the physical, psychological, psychophysiological training of students in a university with their future profession.

Unpopularity of physical exercises in higher educational institutions is explained by the lack of students' skills, experience of physical activity, unequal values of physical education compared to the other professional subjects, lack of opportunity to select the desired type of motor activity (fashion sports), poor diagnosis of psychophysical condition of freshmen, use of traditional methods of lessons in which there is no didactic basis [3, 14, 15]. In terms of market relationships, current economic, political and social environments impose high demands on students of higher educational institutions. Today, they must have not only a large amount of professional knowledge and skills, but also be sensitive to changing situation, find innovative solutions, show creativity. This creates a situation in which the graduate must, along with a high level of professionalism, have developed mental and physical qualities that enable to adapt to professional stress and promote creative longevity [1, 8]. At the same time, such as scientists as B.M. Shyian (2001), A.M. Ponomarenko (2003), O. Podlesnyi (2007), V.M. Sergiienko (2007) noted that the search for effective ways of combining of students' teaching with their future professional activity is focused on the necessity for the correction of purpose and content of the curriculum, for the study of modern technologies of physical education, for increasing of students' activity in cognitive work, due to the fact that in practice graduates are not ready for work as specialists. Therefore, there is a pressing question of introduction of modern technologies of physical education to the students' educational process, which are based on popular forms of physical activity, and which will promote the improvement of health and professional important physical properties.

Research by theme "Enhancing the physical development and physical fitness of different groups of populations by means of physical culture" is performed in accordance with a plan of scientific-comprehensive work of the Department of Theory and Methods of Physical Education at Sumy State Teachers' Training University named after A.S. Makarenko approved by the Institute of Scientific-Technical and Economic Information Ukraine, Kyiv, state registration number 0111 005 736.

Purpose, tasks of the work, material and methods

The goal of research is to analyse the problems of vocationally applied physical training of students of economic specialties.

Results of the research

The need for applied physical training during the educational process of production workers was mentioned in the works of scientists as early as at the beginning of the last century. Even then, experts made the first attempt to

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develop the organizational and methodological aspects of this problem. Analysis of the literature, reference materials and documents [1, 3, 7] showed that the applied orientation in the practice of physical education was determined as early as in the thirties of the last century. And beginning from the sixties a compulsory section "Professionally Applied Physical Training" (PAPT) was added to the program of physical education. PAPT has got further development in the works of scientists V.V. Belynovych, A.V. Korobkov and others, who back in the 60s of last century advanced the idea of a broader and more goal-oriented use of physical culture methods in the workplace. It was proposed to move from the industrial gymnastics to the system of athletic activities for workers' health improvement and development of their professional fitness. Industrial physical education was seen as a means of workers' health strengthening, improving their performance, ensuring applied effect [6, 9]. PAPT is a specialized educational process aimed at the development of physical qualities, motor skills and functions of the body, it promotes successful development and improvement of the profession. PAPT must be built in a sole interrelation (in corresponding proportions) with general fitness (GF) [6].

A large number of scientists such as V.L. Kabachkov, V.I. Ilinych, A.V. Malovanyi, L.P. Pilipei and others are involved in the study of this complex problem. It was found that PAPT, as a multilateral process, has a significant importance both in the system of training of future professionals and in the system of production, i.e. directly in the workplace. Indisputable is the fact that PAPT allows to reduce the time of adaptation to working conditions, to achieve, maintain and increase the performance level during the working hours, to remove fatigue and quickly resume the vitality of human body after work. Therefore the problem of improving the process of professional and applied physical training (PAPT), as such, that is one of the components of professional skills of a person, needs an effective approach for its solving.

Professional and applied physical training, which is a separate section of the course of students' physical education, is the same intermediate link, which connects psychophysiological training of students in the institute with their future professional activity. The subject "Physical Education" implements the connection of learning process at the university with production through the professional and applied training. Professional and applied physical training of future professionals should be focused primarily on the formation of professionally important physical properties and applied motor skills required for a number of categories of workers in the special conditions of their professional activities. It was established that a large range of psychophysical and personal qualities, necessary for a specialist in his professional activity, successfully forms in the process of professional and applied physical training [4, 5, 6]. Works of many authors suggest that professional and applied physical training has positive effect on health improvement, increasing of disease resistance, reduction of injuries. The work of those, who is systematically engaged in professional and applied physical training, is more qualified, economic and productive. These specialists are less subject to fatigue during the operation. Introduction of professional and applied physical training to the practice of students' physical education creates preconditions for shortening the term to achieve professional excellence, high employability and productivity [1, 3, 6].

At the present time the main purpose of PAPT is a focused development and supporting on the optimal level those mental and physical qualities of a person, which are of raise demands of specific professional activities, and also the development of functional resistance to the conditions of these activities, formation of applied motor skills, required in connection with special external conditions of work [4, 6]. As noted by several authors, including [2, 3, 7], the necessity to perform a large volume of academic work under the condition of time shortage, a significant reduction of adaptive mechanisms, leads to progressive deterioration of students' health. As a result, more than 50% of students have low levels of physical fitness, which is a subject for professional and applied physical training. Correlation of general physical training and a special section of professional and applied physical training according to definite specialty for students from different universities can vary significantly. However, the importance of general physical training as a basic foundation for specialized training will be persisted in all cases [3], and it requires a phased approach to professional and applied physical training. Different types of specialists' training in accordance with the standards of higher education are necessary to analyze according to similarity and differences between their professional requirements; to organize and group specialties; to develop programs in accordance with the directions of training. However, the system of students' physical education, which occurred in the country, is ineffective [4]. It does not provide psychophysical and professional readiness of graduates for productive activities and future life and requires constant improvement.

The problem is that universities in Ukraine use a national system of physical education process, where the compulsory PAPT section is based on a normative approach and differed from the European one. Modern education qualifies two main forms of educational process in physical education that are informative and developmental. Informative form provides for students mainly the following processes: to report, to order, to memorize material, to do exercises, requirements and standards provided for and regulated by the teacher and the curriculum. Use of forms and means of physical training is beforehand regulated. This is the so-called normative approach. The second form of organization is development. It provides the creation of conditions that cause students' internal need for knowledge and a desire to be engaged in psychophysical self-improvement and to achieve an appropriate level of physical fitness using all available scientific means [3, 10, 12].

In this case the main challenge for teachers is a focused management of self-improvement PAPT because, as noted by N.A. Tretiakov [5], a significant disadvantage of physical education of students of previous years is its absolute conservatism, unitarity and expressed antipersonal approach. The existing system of physical education was built on the command-normative approach, in which the student's personality was a minor, and a normative indicator was in the first flight. The student was necessary as a means to achieve a certain result. The problem is that universities

in Ukraine use a national system of physical education process, where the compulsory PAPT section is based on a normative approach and differed from the European one. At the same time it is important that more than 50% of students have low levels of physical fitness, and more than a half of graduates are physically unable to work efficiently in manufacture [5]. A new approach to solving the problems of the preparation to the process of study is the adoption of practical importance of physical education, motivation building by demonstration a real necessity and usefulness of the proposed exercises, differentiated taking into account the state of health and future career expectations. Grounds, experimental testing and the use of innovative technologies in the creation of components of PAPT for students of higher educational institutions who study economics are necessary to adapt to the modern requirements of production in accordance with the Bologna Convention, which provides further humanization and democratization of the educational process [3, 13].

It should be noted that the vast majority of students have no interest in physical education. The main reason is the lack of a differentiated approach to specific exercises and loads offered to a student. There is no also any necessary stimulation to physical training and PAPT. Talks that physical exercises are good for health have an abstract nature due to the lack of specific (objective) criteria used on the lessons and also through theoretic unreadiness of students. According to A.P. Vnukov (2005), there are reasons for negative reactions to psycho-physical exercises depending on an individual student, namely, the lack of training goals; insufficient mental vocabulary, skills and abilities; immaturity of a person; low level of consciousness. For teachers of physical education this is the wrong choice of sports, dosages, methods, relationships, forms of organization, lack of proper skill, psychological and pedagogical knowledge, approaches and others. Therefore, one of the main objectives of professional and applied physical training of students is to develop new approaches to develop the necessary mental and physical qualities with the use of methods and modern sports in which students want to be engaged. To build an effective system of training it is required to use popular among students sports, besides, rational system of higher school should consider the interests choosing the means of PAPT. This idea corresponds to the philosophy of humanism, which is a system of philosophy and recognizes the value of a human being as a personality. Humanistic worldview presupposes the respect for the individual, promotion of self-actualization, self-fulfilment and self-improvement.

In works of B.M. Shyian, T.Iu. Krutsevych, L.P. Pylypei and other it is stated that the strategy of modern education consists of direction based on student-centred educational technologies. However, solving the specific tasks the professional and applied physical training of future specialists should be carried out in a close connection with the general physical education, which is the basis for the practical section of the subject "Physical Education" in higher educational institution. Professional and applied physical training is based on the relevant general level of fitness. Proportion of general and professional and applied physical training should vary depending on the profession. In particular N.N. Zavydivska [1], who in her work proposes the method of PAPT increase by introducing a model of professional and applied basis of a healthy lifestyle for students of higher educational institution of economic profile, the main function of which is to optimize the process of healthy lifestyle formation. At the same time, such as scientists as E.I. Maliar (2010); M.R. Lebid (2010), and N.I. Turchina (2008), emphasize that it is appropriate to create a PAPT pilot programs for students of higher educational institution based on some sports.

Therefore, despite the numerous studies of national and foreign authors, the actual problem is to find the effective ways to improve the health of students of economic specialties, their level of physical fitness through the introduction of sport oriented technologies of physical education, which will facilitate the development of positive motivation towards physical education and sports, form the basis of independent sports and physical training activities both in educational system and in their free time.

Conclusions:

1. Analysis of scientific and methodological literature indicates that the question of content, organization of physical education, sport and recreational activities and their professional orientation in universities are studied insufficiently. It should be noted that the vast majority of students have no interest in physical education. The main reason is the lack of a differentiated approach to specific exercises and loads offered to a student. There is no also stimulation necessary for physical training and PAPT.
2. Current system of physical education in universities cannot effectively provide the increase of the level of physical fitness, health, motivation of students to physical exercises and sports, as well as the formation of professionally important mental and psychophysical qualities.
3. One of the main objectives of professional and applied physical training of students is to develop new approaches to develop the necessary mental and physical qualities with the use of methods and modern sports in which students want to be engaged. To build an effective system of training it is required to use popular among students sports, besides, rational system of higher school should consider the interests choosing the means of PAPT

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TECHNOLOGY PREVENTION OF ADDICTIVE BEHAVIOR IN CHILDREN AS PART OF A HEALTHY LIFESTYLE

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Annotation. *Purpose*: to develop a technology of social and educational prevention of addictive behavior in children as part of the organization of a healthy lifestyle. *Material*: a theoretical analysis and compilation of more than 50 sources of scientific and methodological literature. Applied methods of modeling and design of social and educational activities. *Results*: the technology of social and educational prevention of addictive behavior of children in the territorial community. The main components of addictive behavior prevention technologies children are: diagnostic levels of addictive behavior of children in the territorial community; goal-prevention technologies, the choice of technology development or prevention of addictive behavior in children, preparation and planning of prevention, the introduction of technology, expertise and evaluation of the effectiveness of the technology deployed, summing outcomes. *Conclusions:* prevention of addictive behavior is an integral part of the organization of a healthy lifestyle for children. Procedural embodiment prevention of addictive behavior of children in the life of the territorial community is represented as a developed social and educational technology.
Keywords: addictive behavior, technology, prevention, healthy, style, life.

Introduction

The urgency of this topic is conditioned by constant increasing of levels of children's addictive behavior. Addictive behavior is strive for escape from reality by artificial change of own mental state with the help of different chemical substances or by constant fixing of attention on certain kinds of activity for development and maintaining of intensive emotions [2, pg. 103]. A worrisome trend is reducing of addictive persons' age barrier and constant increasing of addictive behavior kinds. Besides chemical addictions, which have already become nearly chronic for our society, such as tobacco-smoking, alcohol, drugs, toxic substances, pedagogues, nowadays, face often with non-chemical addictions. They include: computer technologies, Internet, mobile phones, TV and video, gambling and computer games, food, work, governmental and religious influence as well as all kinds of fanaticism. And it is far from being complete list of phenomena and processes, which can cause addiction.

Different addictions result in problem with progress in studying, with interpersonal communication; they breach child's mental and physical development, can result in death. Using of psychoactive substances, besides their harmful influence on child's organism, can result in same after effects on descendants. That is why organization of child's life functioning on the base of healthy life style, excluding harmful habits, is one of guiding bench marks of education.

V. Bigenskiy, B. Bratus, D. Kolesov, S Kulakov, A. Lichko, I. P'atnitska, P. Sodorov, V. Khersonskiy et al. were the first who started researching of addictive behavior. Main principles of preventive pedagogic, used for prophylaxis of using of psychoactive substances, are elucidated in works by V. Orzhekhovska, O. Pylypenko, Social – pedagogic aspects of prophylaxis of chemical addictions are studied by O. Udalova, N. Maxymova, S. Tolstoukhova, N. Pykhtina, I, shyshova, O. Tiutiunnyk, T. Martyniuk, M. Okarynskiy, O. Murashkevych et. al. Technological approaches of addictions' prophylaxis are worked out in works by T. Fedorchenko, I. Somova, N. Zymovets, T. Yatsenko, T. Andreyeva, K. Krasovskiy/ Healthy life style is scientifically elucidated in works by S. Omelchenko, O. Vakulenko, V. Gotaschuk, O. Shevchuk, L. Suschenko, V. Trokhymets, A. Sxchelkunov et al.

Alongside with it, technological approach has not been elucidated in scientific literature sufficiently. For improvement of organization of child's life functioning on the base of healthy life style we offer to pay attention to working out of technology of children's addictive behavior prevention.

The work has been fulfilled in compliance with plan of scientific & research works of social pedagogic department of "Lugansk national university, named after Naras Shevchenko" as component of complex scientific topic "Content and technology of social pedagogic work with children of risk group" (state registration number 0107V000971).

Purpose, tasks of the work, material and methods

The purpose of the work is development of technology of children's addictive behavior prophylaxis as a component of healthy life style organization.

For solution of our tasks we used the following *methods of research:* theoretical analysis and generalization of scientific-methodic literature, simulation and projecting of social-pedagogic functioning.

Results of the research

Procedural implementation of children's addictive behavior in life of territorial community it is purposeful to present in the form of social technology. To day social technologies are regarded as a combination of means of influence on social object in order for its improvement, ensuring of functioning's optimization, based on "subject-object

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relations". Idea, that in most of cases social technologies are of preventive character, is also important [4, pg. 31; 15, pg. 158].

Technological approach to social-pedagogic functioning is to-day so popular that specialists mark it out in separate branch of social-pedagogic science, such as theory of social-pedagogic technologies. Such branch is a system of scientific knowledge, application of which permits to achieve certain targets, simulate certain social-pedagogic conditions, means and methods [20, c. 11].

With working out of social-pedagogic prophylaxis's technology we shall base on definition, according to which "social-pedagogic technology is means of social-pedagogue's/ social worker's interaction with client, ensuring his (her) socialization in real or specially created conditions" [16, pg. 149-150].

The rules of development of social-pedagogic technologies dictate us need in personalization of social-pedagogic actions, personality's features of specialist, integrity of social-pedagogic technologies with psychological [15, pg. 158; 16, pg. 151].

Any scientifically-grounded technology shall have three distinctive features: division of a process into interconnected stages; coordinated and stage-by-stage achievement of target; uniqueness of operations' and procedures' fulfillment [10, pg. 7]. Besides, social-pedagogic technology is a complex one; within single conception it orients combined actions of different specialists for achievement of a target [16, pg. 155].

Essential characteristic of social-pedagogic technology is presence of clear algorithm of actions, consequent fulfillment of determined stages, oriented on achievement of target [4, pg. 29; 16, pg. 152].

Scientists offer several variants of social-pedagogic technologies' stages determination. Let us not to touch them separately and only note that in this case invariant character has no substantial contradictions, the determined stages can supplement and change each other. Basing on specified by specialists traditional stages of social-pedagogic technologies [4; 10, pg. 33; 16; 21, pg. 46], we can present technology of prophylaxis of children's addictive behavior in conditions of territorial community in the form of the following diagram (see fig. 1).

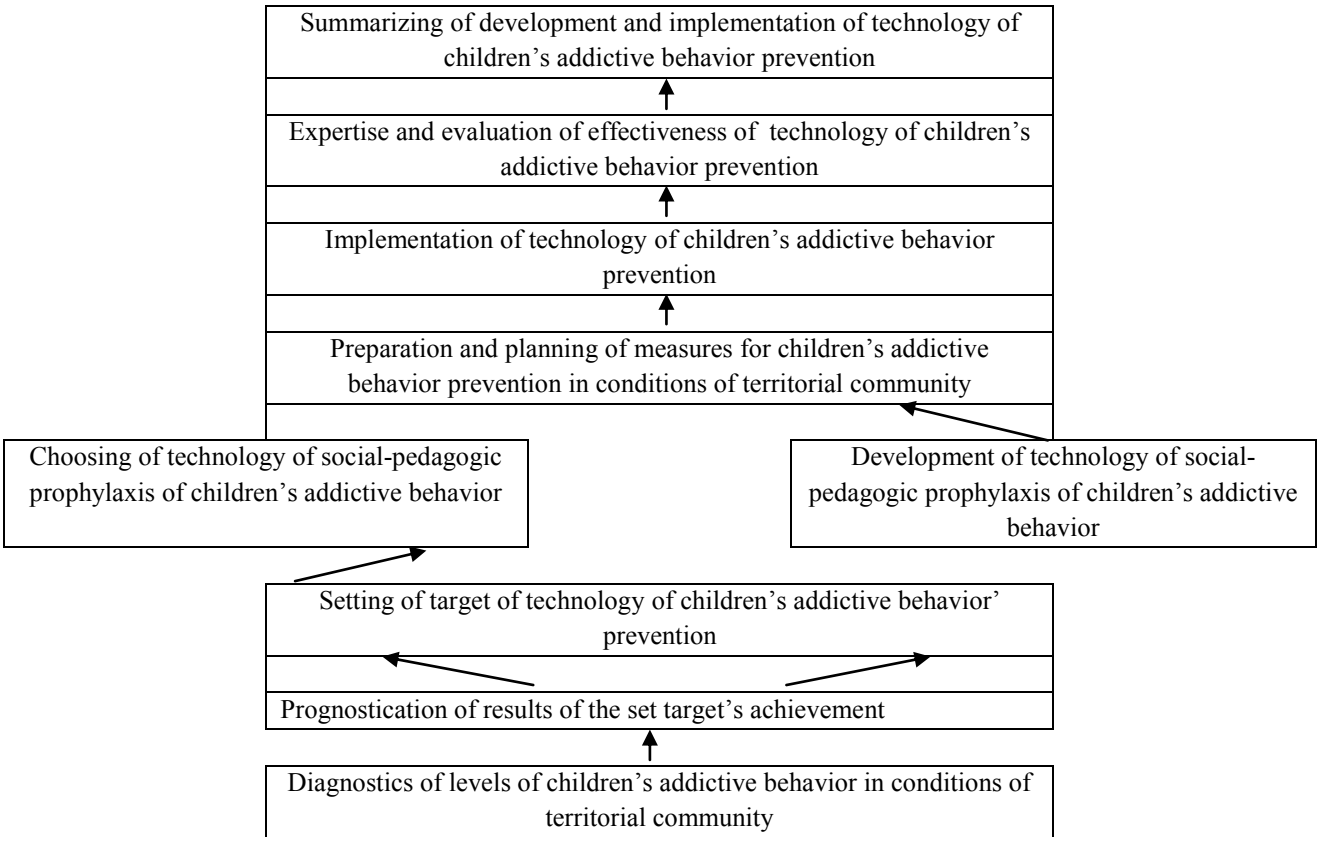

Fig.1. Technology of social-pedagogic prophylaxis of children's addictive behavior in conditions of territorial community

As it follows from the diagram main components of technologies of children's addictive behavoir at level of territorial community are: diagnostics, prognostication, target formation, choice or development of technology, preparation and planning, implementation, expertise and evaluation of technology's effectiveness, summarizing. As far as technologies of social-pedagogic prophylaxis relate to general technologies, which represent regularities of interaction of specialists with a child [20, pg. 46], – technology of prophylaxis of children's addictive behavior in conditions of territorial community relates to type of applied technologies, which are "arranged, planned as per certain project and consequently realized actions, operations and procedures, which instrumentally ensure achievement of the set target in work with a person or group of persons in certain environmental conditions" [10, pg. 1]. Such technology is a continuous one, i.e. it is oriented on support of child's life conditions, prevention from deviations in child's behavior [20, pg. 47].

Logic of further elucidation of technology of addictive behavior's social-pedagogic prevention requires determination of its main stages. Let us regard diagnostic stage of the technology.

"Social-pedagogic diagnostic is specially organized process of cognition, in which there happens selection of information about influence on personality and social environment of social-psychological, pedagogic, ecological and sociological factors for increasing of factors' effectiveness". In social-pedagogic diagnostics there exist social-pedagogic characteristics of educational micro-society, of pedagogic process, of family education as well as individual-psychological characteristics of a personality [4, pg. 51]. It is purposeful to represent diagnostic stage as two main directions of work: first of all diagnosis of levels of children's addictive behavior and status of prevention work in the given community. Secondly, it is determination of risk group children with addictive behavior for further differentiation of prevention influence.

Diagnostic stage of technology of social-pedagogic addictive behavior's prevention can be represented in the form of the given below diagram (see fig. 2).

As it follows from the diagram, mechanism of complex diagnostic stipulates multi-stage character and simultaneous work in several directions. First, we shall know the levels of children's chemical and not chemical addictions in certain community, for us to be able to determine content and forms of preventive influence. Diagnostic methodic of children's addictive behavior's levels envisages observation, questioning of children, method of competent judges. We chose this method because it has undoubted advantage, connected with its efficiency, as far as expert, by his, specialty, knows respondent quite well and it requires much less time than long observation over the tested. Expert judge can be people without special preparation, but knowing those, whom they test [19, pg. 103]. In this case experts are teachers and parents. After analyzed procedures we process the received data and compare them with data of sociological statistics.

As a result we have opportunity to determine how many children are on zero level of addictive behavior, how many of them – on level of insignificant risk and on level of dangerous risk, how many children have steady symptoms of addictive behavior. Application of this methodic stipulates anonymous character and confidentiality of the received data. Only in this way we can receive confident data and determine not only levels of children's addictive behavior but also obtain information about dominating in children environment of certain community kinds of addictions.

For organization of effective preventive process it is necessary to determine the status of preventive work in territorial community. Diagnostic methodic for state of children's addictive behavior's prevention envisages questioning of children, parents and teachers concerning their awareness about sense and content of different kinds of addictions. Questioning of children permits to know what prevention measures were conducted and with what effect; questioning of parents gives information about their worry with problems of addiction in society and in their territorial community and their readiness to take part in preventive process. Results of teachers' questioning are determination of pedagogues' competence levels and their readiness for prevention work.

For determination of risk group specialists offer to "scan" all children [4, pg. 56]. Methodic of determination of risk group children with addictive behavior shall show presence of psychological, social and biological risk factors, which make a child non resistant for addictions. It is stipulated to carry out psychological d diagnostic methods for every age period.

As far as social risk factors include family as main institute of personality's socialization, teaching staff and group of peers, determination of risk factors in these spheres is possible with the help of analysis of family social situation of development, methodic of group's diagnostic, including sociometry, talks with class supervisors, analysis of school documentation (register, social passport of class) and, undoubtedly, with the help of observation. Diagnostic of biological risk factors of addictive behavior implies analysis of school medical documentation; if necessary to specify data- consultation with school doctor. Determination of children with steady addictive behavior is fulfilled, mainly, with the help of observation and talks with class supervisor and parents.

Next stage – is a predicting one; it implies determination of problem and prognostication of progressing of education. Prognosis is oriented on determination of object's potential - as far as this object is the base of pedagogic functioning - on dividing it into elements and determination of links between them [10, pg. 34; 20, pg. 48].

This stage shall compulsory include analysis and systemizing of information, which was received at diagnostic stage, on the base of which it is possible to make certain conclusion [16, pg. 154].

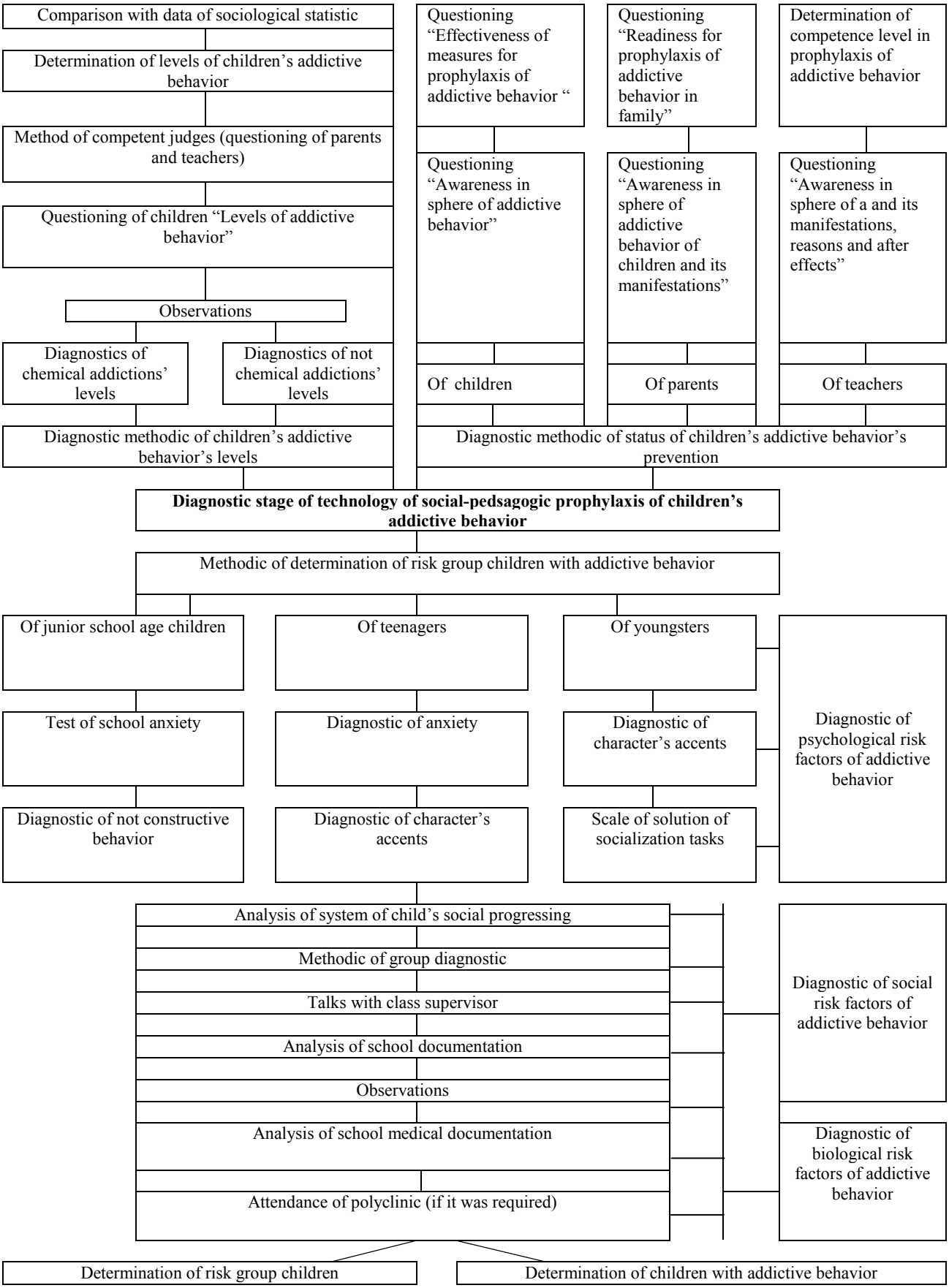

Fig.2. Diagnostic stage of technology of social-pedagogic prevention of children's addictive behavior in conditions of territorial community

It would be quite correct to use technologies of social-pedagogic prophylaxis of children's addictive behavior, general scientific group of predicting methods, such as analysis, synthesis, extrapolation, interpolation, induction, deduction, analogy at prognosis stage [4; 18; 19, pg. 112].

In the frames of researching of our problems such methods will be comparative analysis of main parameters of social-pedagogic objects of preventive system, analytical work with registered results, working out of criteria of preventive technology's effectiveness, creating of universal models of next stages of social-pedagogic prevention of addictive behavior.

After specialist's collecting information about object of influence, making of social diagnosis, he, on this base, formulates the aim of social-pedagogic functioning and, in compliance with it, the tasks. Prognostication and determination of aim are closely connected [10, pg. 34; 16, pg. 154].

The purpose of technology of addictive behavior's prevention is reducing of levels of all kinds of children's addictive behavior in conditions of territorial community.

The tasks of prevention system of children's addictive behavior are the following: full refusal of chemical addictions; reduction of technological addictions' level; reduction of procedural addictions' level; reduction of food addictions' level; reduction of psycho-emotional dependences.

The next stage is a stage of choice and working out of social-pedagogic technology. In other words, in specialists' opinion, social pedagogue, in his, functioning, can choose the technology, which he considers purposeful for solution of certain problem and also he can compose his own program and work out or improve existing technology independently [16, pg. 154; 20, pg. 50].

For working out of technology of children's addictive behavior's prevention it was offered to combine main elements of general social-pedagogic technologies, developed by leading specialists in these problems and apply them as per context of prevention of addictive behavior.

Scientists offer to realize these procedures with the help of traditional epistemological methods: method of dialectics, analysis and synthesis, theoretical simulation, social projecting [4, pg. 52].

At this stage there happens individualization of technology, considering situation, specificities of an object, possibilities of a specialist [10, pg. 35].

With working out of social-pedagogic technology it is necessary to consider social circumstances and features of a person, which can ensure identification, individualization and personification of the technology [19, pg. 76].

The next stage of technology of social-pedagogic prevention of children's addictive behavior is the stage of preparation and planning; it is oriented on determination of material-technical, organizational and methodic aspects, required for effective implementation of the technology. It permits to prevent from complications and delay in realization of prevention influence.

This stage of social-pedagogic technology of children's addictive behavior's prevention in conditions of territorial community stipulates start of illuminating functioning for familiarization of future subjects of prevention system with content of experiment and formation of their motivations for active participation in realization of developed technology.

Now, we have come to characteristic of procedural stage. This stage is a process of direct realization of certain functioning; it is considered to be one of main stages [20, pg. 48]. Quantity of directions, forms and methods of work of this technology's stage is so numerous that it is impossible to elucidate them all in the present article; separate publication will be devoted to this problem.

The next stage of social-pedagogic technology of children's addictive behavior's prevention in conditions of territorial community is expert-evaluating one. This is a stage, which permits to estimate the results of technology's implementation, effectiveness of fulfilled work [10].

At this stage specialist carries out complex expert evaluation, determines how effectively the problem was solved. If the problem is solved – cooperation of specialist and client can be considered to be completed. If specialist was not able to solve the problem or solved it partially, it is necessary to find out at what stage technology should be corrected [4, pg. 52; 16, pg. 154].

Conclusions:

Procedural implementation of prophylaxis of children's addictive behavior in life of territorial community has been presented in form of social technology. Main components of the technology of children's addictive behavior's prevention at level of territorial communities is diagnostics, prognostication, aim-forming, choice or development of technology, preparation and planning, implementation, expertise and evaluation of technology's effectiveness, summarizing. Diagnostic component has been presented by the following main directions of work as, first – diagnostic of levels of children's addictive behavior and state of prevention work in certain territorial community. Secondly, - it is determination of children of risk groups and children with addictive behavior for further differentiation of prevention influence. Methodic of determination of risk group children with addictive behavior shall specify presence of psychological, social and biological risk factors of addictive behavior. Prognostic component of technology of addictive behavior prophylaxis includes analysis and systemizing of information, which was obtained in the process of diagnostic stage. Aim bearing component of technology of children's addictive behavior prophylaxis implies formulating the purpose of social-pedagogic functioning and, in compliance with it, the tasks corresponding to determined social diagnosis. The purpose of the technology of children's addictive behavior's prophylaxis implies reduction of all levels of addictions. The stage of choice and development of social-pedagogic technology and the stage of preparation and

planning mean determination of material-technical, organizational and methodic aspects, required for effective implementation of the technology. Expert-evaluation stage permits to appraise result of the technology's implementation and effectiveness of the fulfilled work. And summarizing stage stipulates summarizing of implemented technology's results also with the help of mathematical statistic's methods.

The prospects of further working out of the problem imply definition of directions, forms and methods of work on technology of children's addictive behavior's prevention.

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METHODOLOGICAL BASIS FOR THE FORMATION OF PHYSICAL CULTURE PERSONALITY

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Annotation. *Purpose*: to analyze the phenomenon of physical culture of the person subject to the methodological approaches its formation in the system of physical education. *Material*: analyzed 20 literature resources. *Results*: theoretical analysis possible to trace the emergence of approaches to physical training as a spiritual and physical phenomenon. Defined by its focus on the social and personal problems. Also identify the goals, objectives, content and conditions of physical education. Formulated conceptual idea: the construction of projective models of formation of physical culture of the person is determined by their axiological, anthropological and ontological components (in some combination of the two interrelated areas of personal development as a body-spirit nature and culture). It is shown that the real number of different models of targets and mechanisms to achieve them. The models are defined stages of individual, social and cultural development of the individual. Models include adaptation, socialization, self-actualization and inculturation. *Conclusions*: the formation of physical culture of personality based on modern concepts of the general theory of humanistic culture, the theory of human action. This work takes into account the philosophical, pedagogical and psychological aspects. Definition of methodological approaches allows us to construct the projective model of the formation of personality and physical culture reorientation teaching activities in this direction.
Keywords: methodology, humanization, principles, physical, culture, personality, model, physical training, education.

Introduction

Deep changes, which took place in methodology of science, are connected with loosening of steady positions and principles of classic rationalism, in particular mono logic approaches and retentivity of truths; they actualize new understanding of acquired experience and modern trends in development of education, in sphere of physical culture inclusive, in order to reconstruct traditional unified and insufficiently effective, as on to day, system of students/pupils' physical culture.

Formation of personality's physical culture is undoubtedly a complex pedagogic task. Research of physical culture phenomenon from philosophical-cultural positions and systemic analysis (V. Balsevich, M. Vilenskiy, Ye. Vilchakovskiy, T. Krutsevich, V. Vydrin, L. Matveyev, L. Lubysheva, B. Shyan et al.) permitted to develop conception "physical culture of personality" and gave birth to a number of fruitful theories, which open value aspect of physical culture, its biological and social, body and spiritual components that help to solve the problem of personality's physical culture's formation in modern physical culture education. Analysis of recent publications shows that application of synergetic [5], cultural and activity's [16], competence [6] approaches provides new information about balanced pedagogic influence both on motion and mental functions, on intellectual and physical abilities, sport abilities of a personality as well as on increasing of physical culture's humanistic functions in formation of personality's physical culture and healthy life style [4]. So, formation of personality's physical culture of students/pupils is an urgent task and requires separate, complex analysis for determination of methodological principles.

The research has been fulfilled in compliance with complex plan of SRW "Methodological, content and methodic innovations in professional-pedagogic training of physical culture instructors, in context of credit-module system's implementation" (O109U004948) of theory and methodic of physical culture depar6tment of Sumy state pedagogic university, named after A.S. Makarenko.

Purpose, tasks of the work, material and methods

The purpose of the research is to analyze formation of personality's physical culture from the point of view of methodological approaches, to formulate conceptual idea of its formation in system of physical culture education.

Results of the research

Methodology of the research is based on philosophy about man (B. Ananyev [1], V. Andriuschenko [2] et al.) and sociology of physical culture and sports (V. Vydrin [3], L. Lubysheva [10], V. Stoliarov [14] et al.). Theoretical cognition of object of the research we started to regard in context of general methodological problems: cognition of contradictions; correlation of general and specific; categorical characteristics of personality's physical culture.

In methodological foundation of concept of personality's physical culture formation determining role is played by *systemic approach,* which ensures holistic view at process of personality's formation in system of physical culture education [1; 13], permits to analyze it in unity of all sub-structures of social-educational environment of educational establishment, of components of pedagogic process [8; 14]. Systemic approach to physical culture education permits to discover integrity of functional, value and activity's aspects [10, 92]. The sense of these aspects and their interconnection facilitate the fullest realization of integrated, spiritual-physical essence of physical culture 11].

Synergetic approach, being a part of systemic, accentuates attention at coordination of interaction of components, when creating a system as unity [12]. For complex systems, such as physical culture, some alternatives of development are possible. Their choice is connected with choice of way at bifurcation points, which are, in pedagogy and psychology of personality, sensitive periods of ontogeny, optimal for development of physical qualities and

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psychological processes of a person. The more correct and timely was way of individual development, the more successful will be pedagogic influence, oriented on formation of personality's physical culture [5, 122].

Cultural approach ensures analysis of phenomenon, which is studied, against of wide general cultural background of educational environment, with studying of interconnection of formation of all components of personality's physical culture, ensuring full-fledged process of comprehensive development of his (her) intellectual, moral, mental, physical, aesthetic and other qualities on the basis of values of culture and morality [2; 4; 18]. Physical culture with it is regarded as form and method of self-development of culture, putting personality in the center of educational process [14].

From the point of view of *axiological approach* physical culture of personality is a measure of person's mastering of values, interiorizing of which makes them subjective and more significant. This process is connected with activation of development of cultural self-consciousness and cultural transformation functioning in sphere of physical culture. Main factors of development, in this case, are contradictions between actual and potential body-spiritual abilities and demands of personality. Required for her (his) adaptation, socialization, individualization and in-culturing in natural and social environment [10], as well as between demands of society to body-spiritual conditions of a man and his actual state [3]. Only through such hierarchy of value approaches as personality-culture-society it is possible to realize perspective model of formation of personality's physical culture [10; 17].

Anthropological approach belongs, by its orientation, to humanistic problems because it is oriented on a person, on aims, means, ways and conditions of person's development. The founder of anthropological approach to physical education P; Lesgaft is considered to be, who said that "… tasks of true education imply education of whole person, without divisions into mind, souls and body in to any independent parts" [9, 271]. Being connected with humanology, anthropological approach permits to understand wholeness of human nature, sense of education, development, interaction of their movers [1]. Anthropological approach is the basis for starting of human-related direction in process of physical culture education; it permits to mark out its specific features, which imply simultaneous influencing on motion sphere of a personality and on social-psychological sides of his (her) organization. The culture of internal sphere and body of personality is, in this case, main criteria of his (her) qualitative progressing in two interconnected and inter-conditioned directions "body-spirit" and "nature-culture" [20].

Mentioning of *competence approach* is conditioned to regard personality's physical culture as ability to promptly and effectively act in situations of social interaction on the base of complex of physical culture values, physical qualities, cognitive and practical experience, readiness of a personality to mobilize all resources, required for fulfillment of task at high level and adequately to certain situation [6]. B. Grut [19], I. Voimar [20] point that physical culture education shall develop behavioral competence, which ensures presence of mental and psychic settings of personality for solution of certain life problems on the base of such components as readiness for target formation, readiness for estimation and reflection.

Achmeologic approach serves for intensification of homeostatic processes, adaptation, socialization, self-actualization and in-culturing in educational environment of educational establishment. It permits to project models of achievements of "achme" physical, personality's, social and spiritual self-progressing, i.e. to reach physical culture education – high level of mastering of physical culture values, mastering of special knowledge and vitally important motion actions and, as a result, to have high level of motion functioning and somatic health, which permits to ensure effective formation of personality's physical culture [10; 16].

Personality-oriented approach determines unity of personal and activity's components in educational process. Personality's component determines means registration, in educational process, of individual features of persons, who study, realizing it through sense, form of educational classes, character of interactions and inter-relations. Activity's component determines means of mastering of educational material, samples and methods of thinking and functioning, development of cognitive and creative potential of subject of teaching [2]. Application of personality-activity's approach in process of education stipulates change of relations between participants of pedagogic process. Command pedagogic is changed by pedagogic of cooperation. Sense of subject-object model of inter-action model is a priority of subject-object relations [2, 143].

As per principles of *environmental approach* [13] leading method of formation of personality's physical culture is specially created in educational establishment of physical culture environment as combination of different conditions and opportunities of physical and spiritual formation and personality's self-progressing, which are in space-subjective and social environment. The structure of such environment includes subjects (pedagogues, pupils and other), space-subjective (physical environment), social-communicative (value orientations and social interactions) and sense-technological (programs, methodic, etc.) components that facilitate holistic development and self development of a personality.

The conducted theoretical analysis permitted to determine formation of approaches to physical culture as spiritual-physical phenomenon, its orientation on social and personality's problems. We marked out methodological approaches to formation of personality's physical culture in system of students/pupils' physical culture education's system permit to determine purpose and task (axiological, cultural and synergetic approaches), content (anthropological, cultural, synergetic approaches), conditions of realization of physical culture education (systemic, competence, personality-activity's and environmental approaches).

From this analysis it follows that formation of personality's physical culture shall be built on the base of complex combination of methodological approaches and principles, which determine functioning of this process. As far

as physical culture, as basic part of general culture, is oriented on achievement of the whole number of interconnected aims, such as health, education, development, recreation and so on, then sequence of their achievement can be ensured not only by methodological approaches and principles of organization of physical culture educational process, but also by peculiarities of students/pupils' contingent. Multi-level system of education covers significant part of human life, within which person growth and develops. Synergetic approach points, that in target-formation it is necessary to consider age limits of contingent with special set of sensitive periods, with intrinsic only to them stages of mental and physical development of person. Axiological approach points at development of value-understanding, formation of value orientations. From the points of anthropological approach, if not to limit potential of physical culture only by forms of motion functioning but, on the contrary, expand it to format of "anthropological ethic", formation of image of modern man, mastering of game character of modern culture [1, 143], then consideration of this targeted orientation will bring new results with building of physical culture process. Besides, interconnection of axiological and anthropological approaches, which is conditioned by social-pedagogic, humanistic essence of education, its orientation on preservation of human ecology as holistic system, which has body-spiritual unity, dynamic and individual character and points at specification of targets at every stage of individual and social-cultural development of students/pupils.

The above said, as well as analysis of human environment [1; 2] and sense of appearance and multi-facet character of physical culture's manifestation [3; 10; 13] permit to formulate conceptual idea that building of models-projects of formation of personality's physical culture of different age students and pupils, which differ by targets and mechanisms of achievement, is set by their axiological, anthropological and ontological components, meaning by some or another combination of two inter-connected and inter-conditioned directions of personality's progressing in system of physical culture education: "body-spirit" and "nature-culture". As far as main factors of physical culture's development is contradiction between actual and potential body-spiritual potentials and demands of a person as well as demand of society to human spiritual-body conditions and their actual state [12, 14], then every individual shall, to some extent, pass stages of individual and social-cultural development, which envisage adaptation, socialization, self-realization and in-culturing [10; 12]. It means that in pre-school education and in primary school priority shall belong to health related adaptive model of formation of personality's physical culture, oriented on development of natural, body-motion potential of a pupil; in basic one – socially-oriented model, oriented on formation of body-motion potential, considering demands of society; in senior or vocational school – competence-oriented model, which stipulate formation of holistic (spiritual body) human culture and formation of healthy life style in harmony with nature and culture.

Conclusions:

Thus, analysis of theoretical-methodological principles of formation of personality's physical culture shoes that they are based on modern humanistic conceptions of general theory of culture, theory of human functioning, considering its philosophical, pedagogic and psychological aspects. Determination of methodological approaches permits to build models-projects of formation of personality's physical culture and re-orientation of pedagogic functioning in this direction in real practice of physical education of students and pupils.

Further researches imply foundation of sense and structure of personality's physical culture and building of model-projects of its formation in system of physical education of modern school.

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STATE ADAPTATION RESERVES CARDIORESPIRATORY SYSTEM FIRST-YEAR STUDENTS WITH VARYING DEGREES OF PHYSICAL FITNESS IN TERMS OF TREADMILL TEST

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Annotation. *Purpose*: to examine the state of the cardiorespiratory system in terms of the stress test in first-year students with different levels of fitness. *Material*: the study involved 43 students, of which 18 boys and 25devushek basic medical group. The study used a treadmill, a pulse oximeter, spirometer. *Results*: more adjustment disorders were detected in students that are not involved in physical education at school. Decreased ability of the cardiorespiratory system to maintain proper oxygen supply of the organism in the stress test. This is not observed in students who were attending school in addition sports clubs. Found that students with low tolerance to physical exercise need a separate program of physical training, the dynamic control of the teachers and the need for additional medical examination. *Conclusions*: the treadmill test is an ideal way of revealing hidden maladjustment cardiorespiratory system in adolescence.
Keywords: adaptation, students, treadmill, cardiorespiratory, system, reserves.

Introduction

Recent years de-adaptation of young people has been becpming a subject of numerous medical-biological researches in connection with expansion of this phenomenon in many of developed countries of the world (Resolution of Supreme Council of Ukraine No. 2992-VI, dt. February 3, 2011 "Recommendations of parliamentary session about state of youth in Ukraine "Youth for healthy life style"/Bulletin of Supreme Council of Ukraine – 2011, vol.24, p. 173.) [1]. Analysis of students and pupils' state in schools and higher educational establishments (HEE) of Ukraine showed the sighns of fe-adaptation, deviations in health nearly of 90% of young people, among which more than half have insufficient physical fitness [2]. The so-called critical periods of life – endocrine reconstruction, heredity, change of conditions and locations of residence, peculiarities of study and work, diseases play great role in formation and increasing of de-adaptation state [3]. Besides, regular physical culture trainings have not become usual norm of life for most of young people. Using of alcohol, smoking hypo-dynamia are quickly expanding among young people. Only every fifth boy or girl of school age have sufficient level of health related motion functioning and it is the lowest in Europe indicator. 60% of Ukrainian pupils are not able to fulfill general European tests of physical fitness "Euro-fit". It was stated that in Ukraine, during studying at comprehensive schools, schoolchildren loose at least one third of their health (Resolution of Supreme Council of Ukraine No. 2992-VI, dt. February 3, 2011 "Recommendations of parliamentary session about state of youth in Ukraine "Youth for healthy life style"/Bulletin of Supreme Council of Ukraine – 2011, vol.24, p. 173.) De-adaptation in eouth age is a result of influence of inadequate mechanisms of human adaptation to physical and emotional influence, which are accompanied by quick tiredness, reducing of worjability and quality of life, formation of functional diseases against the background of neuro-endocrine dysfunction [4, 7].

In such conditions at physical culture trainings there appears a demand in dividing of pupils and students into groups as per their state of health- special health groups, preparatory groups and main groups. The latter is also non-uniform by state of adaptation. In most cases, the level of tolerance to physical load, state of oxygen-transportation system of these students is not examined sufficiently before beginning of physical culture trainings [3, 4].

That is why it is interesting to research tolerance to physical loads, cardio-respiratory system's indicators of first year students, who had physical training at schools only at physical culture classes in main group, or attended sport circles.

The presented results of our research is a fragment of complex work "Sex dimorphism in adaptation mechanisms to stress loads in young age during health related sport trainings", state registration No. 0113U002431.

Purpose, tasks of the work, material and methods

The purpose of the work is to analyze functional state of adaptation reserves of first year students with different stage of functional fitness by indicators of cardio-respiratory system in conditions of stress-test.

Methods and organization of the research. For solution of our tasks we tested 43 first year students, of 17-18 years old age (18 boys and the rest – girls). All tested were divided into groups: 1 and 2 groups – 12 girls and 8 boys accordingly, who, before entering HEE did nor practice physical culture regularly; 3rd group – 13 girls, who attended basketball circle (n=4), aerobics (n=8), from 1 to 2 years; 4th group – 10 boys, who trained running; group of boys, who played football (n=4), from 1 to 3 years.

For fulfillment of stress-load we used treadmill test (Biomedical Systems), as per protocol of Bruce with increasing step-by-step power and duration of every stage 3 minutes; angle of bending changed every 3 minutes (rising by 5 cm in respect to median of track and corresponded to 5% (2.5) of sub maximal HBR. Tolerance to load was evaluated in MET (1 MET = 3,5 ml.per O2/kg.p.min.). We determined maximal aerobic power during stress test (max VO2, ml/kg/min). Also, we evaluated maximal indicators of haemo-dynamic: heart beats rate (HBR), systolic BP (max SBP), diastolic BP (max DBP) in conditions of load. Choice of treadmill test in comparison with cycloergometer is

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connected with its higher physiological abilities and clear dozing of loads, where sub-maximal heart brats rate is achieved oftener [5].

In the process of treadmill test we controlled subjective students' response to physical load (heavy breathing, dizziness, general weakness, headache and etc.), haemo-dynamic response (heart beats rate, blood pressure), ECG changes. During stress test and in recreation period we determined content of oxy-hemaglobine in arterial blood with the help of pulse- oxy-meter (YUTASOKSI -201). Besides, at portable digital spirometer (Minitest), we determined forced vital capacity of lungs (FVCL), volume of forced exhale per 1 second (VFE).

For evaluation of results confidence we used variation-statistic method of results' analysis with the help of statistic program Statistica v.6.1 (USA) and recommendations of O. Yu. Rebrova (2002).

Results of the research

We determined reduction of tolerance to physical load of 1st and 2nd groups' boys and girls accordingly by 27.96±2.05 % and by 28.46±1.37 % ($p<0.05$), comparing with 3rd and 4th groups) see table 1). Increasing by intensity physical load is accompanied by increased demand of tissues in oxygen. However maximal VO2 of students of 1st andi 2nd groups was lower by 24.52±1.83 % and 34.62±2.66 % ($p<0.05$), in respect to results, received in 3rd andi 4th groups. It witnesses that "oxygen deficit" appears quicker in group of boys and girls, who did not practice physical training earlier – at school and at home. The registered changes were accompanied by appropriate response of cardio-respiratory system.

Table 1

Haemo-dynamic and oxygen provision of dozed physical load of young people

Tested indicators	Not trained students		Trained students	
	1 group (girls)	2 group (boys)	3 group (girls)	4 group (boys)
Increment of HBR (%)	87.0±2.15	75.0±3.34	82.5±1.67	85.33±2.72
Final SBP, mm.merc.col	115.83±1.46	115.0±2.63	112.75±2.10	128.4±3.06
Final DBP, mm.merc.col	66.67±1.83	70.0±2.80	65.0±1.72	80.0±2.34
max SBP, mm.merc.col	146.67±2.05	140.0±3.11	155.0±2.23	137.0±3.12
max DBP, mm.merc.col	88.33±1.16	85.0±2.18	82.67±0.85	71.18±1.15
max METS, (ME)	8.45±0.52	7.92±0.60	11.73±0.63	11.07±0.69
max VO2, (ml.kg.p.min)	29.65±1.19	24.3±1.56	39.28±2.04	37.17±2.38
Distance, (miles	0.40±0.04	0.39±0.03	0.56±0.03	0.54±0.05
SpO2, % (stress test)	94.5±1.10	97.8±1.42	95.2±0.88	98.3±1.36

So, it was stated that trained boys (4th group) had increment of HBR in conditions of stress test higher than (13.77±2.52)% - indicators of increment, received in group of boys, who trained physical culture only at physical education classes. Concerning girls, who attended sport circles (3rd group), HBR increment in conditions of stress test was by (15.17±2.34)% ($p<0, 05$) and was higher than the same of 1st group girls. HBR changes were accompanied by change of BP. For example, increment of SBP of not trained girls was (26.63±3.12)%, boys had increment a little lower – (21.72±2.65)%. SBP increment of trained girls was (37.47±3.36)%, and trained boys – (30.1±2.48)%. Thus, results of SBP increment of trained students were confidently better ($p<0.05$) than indicators of increment, received in 1st and 2nd groups.

Also we determined that DBP response of 3rd and 4th groups at load was by 6.41% ($p<0.05$) and 13.56% ($p<0.05$) less than results, obtained in 1st and 2nd groups accordingly.

Such dynamic of BP can witness that trained students have better condition of heart and periphery blood circulation under load [6].

Test of blood saturation with oxygen before load showed final low figures Sp O2 (95.6±1.17)% and (96.3±1.53)%, accordingly, of 5 girls (41.67%) and 3 boys (37.5%) of 1st and 2nd groups. Among trained boys (n=13), only two of them (15,32%) showed reducing of basal level Sp O2 up to 96.0%. 8 girls of 1st group showed reduction of Sp 5 girls. 4 boys from 2nd group during 4-7 minutes manifested transitory reduction of indicators Sp O2 up to

(94.62±1.44)%. Concerning girls and boys, who attended sport circles, during treadmill test indicators Sp O2, did not confidently change.

The carried out spirometry showed reduction of final FVCL (2.84±0.22) l of 6 girls (50%) of 1st group and of 3 boys (37.5 %) of 2nd group in respect to proper value of (3.47±0.31) л. The same changes (2.86±0.14) l were registered after stopping of physical load for 1-2 minutes among 8 girls (66.67%) of 1st group and among 4 boys (50 %) – of 2nd group. At the same time final FVCL indicators of 3rd and 4th groups' students were (3.46±0.28) l.; after 1-2 minutes after stopping of load it was in limits of expected norm (3.34±0.22) l. ($p>0.5$).

Indicators of VFE1 in 1st and 2nd groups were moderately reduced only among 4 students (2.86±0.19) l. Among girls and boys of 3rd and 4th groups, indicators of VFE1 did not confidently change.

Thus, in group of students, who were not trained in school, we registered changes of spirometry indicators, which witness about presence of respiratory disorders of restrictive type that can be connected with restriction of inhale depth reducing of breathing muscles' elasticity, disorders in vegetative regulation [7].

The conducted researches permitted to determine that cardio-respiratory system of students with reduced tolerance to physical load is not able to increase oxygen supply to skeleton and breathing muscles during long time for full ensuring of demand in ATF with the help of aerobic processes. It is known that not trained muscles have less quantity of mitochondrion that limits energy generation and, accordingly, level of tolerance to physical loads [8].

Reduced tolerance to physical load among first year students was accompanied by reduction of maximal aerobic power, insufficient haemo-dynamic provisioning of stress test [6, 7]. Besides, part of young people showed reduction of Sp O2 in rest, under load and in first minutes after treadmill test, the obtained results were accompanied by reduction of indicators, mainly FVCL. At the same time among students, who, before entering HEE, regularly attended sport circles, besides academic physical culture classes there were found no significant deviations in cardio-respiratory system under load. It proves significance of systemic trainings in increasing of effectiveness of mitochondrion breathing, metabolic adaptation in formation of endurance in young age [9-15]. Just metabolic response to physical load is determined mainly by oxygen supply to working muscles, which in part of first year students of main group is in improper condition.

The conducted research proves existing idea about low effectiveness of school physical training program (Resolution of Supreme Council of Ukraine No. 2992-VI, dt. February 3, 2011 "Recommendations of parliamentary session about state of youth in Ukraine "Youth for healthy life style"/Bulletin of Supreme Council of Ukraine – 2011, vol.24, p. 173.) [2]. Thus, application of load tests, especially treadmill, changes homeostasis of cardio-vascular system in rest. It results in appearing of pathological-physiological mechanisms, latent or hardly diagnosed in young age pathological changes, de-adaptation and so on. Also treadmill test permits to determine fitness, compensatory potentials of cardio-vascular and respiratory systems in process of health related physical culture trainings.

Conclusions:

1. Treadmill test is an ideal method for evaluation of potentials of compensatory-adaptive organism's mechanisms in young age, especially of cardio-respiratory system.

2. Students of main group, by their adaptation to physical loads are rather heterogeneous group and it should be considered in health related physical trainings.

3. Reduction of adaptation reserves of a part of main group students is connected with cardio-respiratory system's inability to ensure oxygen supply to skeleton and breathing muscles during long period of time that, partially, is a result of insufficient physical training in domestic conditions and in school before entering HEE.

4. Students of main group with reduced tolerance to physical loads require separate program of physical training, dynamic control, to be ensured by instructors, and, if required, additional medical examination.

The prospects of further researches imply analyzing of influence of health related physical culture trainings on bio-chemical mechanisms of metabolic adaptation.

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BASIC PROVISIONS OF INTERNATIONAL CLASSIFICATIONS AS CRITERIA FOR EVALUATING THE HEALTH STATUS OF REHABILITATION OF PERSONS WITH DISABILITIES

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Annotation. *Purpose*: to justify the need for the use of the main provisions of international classifications to determine the state of health improved and effective rehabilitation of persons with disabilities. *Material*: analyzed more than 50 sources of literature and international instruments on the main provisions of international classifications. *Results*: conducted a thorough analysis of the content of international classifications. Scientifically substantiated the need for their use in the practice of physical rehabilitation of persons with disabilities. Identify important issues methodically theoretical security goals and objectives of certain types of rehabilitation for persons with disabilities. Subject of discussion questions remain concerning the evaluation criteria of life and human health, the very structure of the rehabilitation process. At the present stage there is scientific and methodological basis of the formation of a new modern tools for determining the conditions of human health arising from the disability. The principles laid down in the international classifications reflect the goals and objectives of rehabilitation, in particular physical rehabilitation of persons with disabilities. *Conclusions*: these classifications can be successfully used effectively in the process of assessing the level of life and human health, as well as the very structure of the rehabilitation process. Use of certain elements of the international classifications significantly increase efficiency in the provision of rehabilitation assistance to persons with disabilities and improve the methodological approaches to the use of physical rehabilitation.
Keywords: health, rehabilitation, disability, limitations, vital activity, social, insufficiency, classification.

Introduction

Recent ears working out and adoption of a number of laws of Ukraine have stimulated new schemas of solution of disablement's problems; these laws outline demand in conditions, which would permit for disabled persons to realize their right and freedom and have full fledged life-style in compliance with their individual abilities and interests. All recent years Ukraine has been carrying out a policy of transition from medical to social model of disablement. Re-orientation of priorities in attitude to disabled persons resulted in improvement of their social protection mechanisms, including employment, education, pension provision, travelling, communication, formation of personal sense of dignity [2, 12, 15]. Approaches to rehabilitation of disabled persons also have significantly changed. Recent decades scientists', in their researches, have proved purposefulness and need in applying of health related and correcting-rehabilitation measures to such population groups [2, 3, 4, 14]. But as on to-day great number of both social and humanistic rehabilitation of disabled persons tasks still have remained to be unsolved. For example methodic theoretical provisioning, determination of purpose and tasks of certain kinds of rehabilitation for disabled are rather important. Criteria of life human functioning and health estimation still are discussable as well as the structure of rehabilitation process itself. In spite of strict requirement to wholeness of rehabilitation processes, the latter is often a combination of relatively separated and structuralized elements, which can be separated in space and time; besides, questions concerning significance and required quantity of separate components and their place in rehabilitation programs still have been unsolved. Speaking about great scientific and practical significance of analyzed by us domestic and foreign works it should be noted that formation of effective rehabilitation system for disabled persons have been studied insufficiently yet in theoretical-methodological and practical-applied aspects. Determination of conceptual approaches and technological decisions, concerning evaluation of disabled persons' bio-social state and appropriate differentiated application of physical rehabilitation means and methods, have been still remained out of scientists' attention.

Purpose, tasks of the work, material and methods

The purpose of the research is to ground need in application of main principles of international classifications, concerning health's evaluation as well as improvement of disabled persons' rehabilitation.

The methods of the research: the research is based on analysis of special literature and documents. Besides, we used social methods: analysis, synthesis and generalization, comparison and analogies.

Results of the research

In such international documents as "Declaration of human rights", "Declaration of disabled persons' rights", "Standards for ensuring of equal rights for disabled persons" UN equalized rights of healthy person with disabled one. In these documents international community expressed desire to maximally integrate disabled people in society, to involve them inaccessible for them socially useful work; different terms and concepts about disabled persons were interpreted and specified, including concept "disablement". In 1980 committee of experts of World health protection organization (WHPO) determined medical rehabilitation. Alongside with it, in the same year WHPO prepared "Guide for classification of diseases' after effects" that was tested in many countries. After this testing it prepared «International Classification of Impairments, Disabilities and Handicaps», "International nomenclature of disorders, restrictions of life functioning and social insufficiency" (ICN), which were approved by !0th International conference,

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devoted to reviewing of diseases' classification (ICD) in 1989 [9, 10]. ICN is actually three dimension model of functional restrictions and functioning restrictions' conceptualization. As per ICN there are three aspects of disease's after effects: materialization of pathological processes- disorders or impairment; objectification of pathological processes – restriction of life functioning (disability); "socialization" of disorders and restriction of life functioning – social insufficiency or handicap. ICN interprets social insufficiency as such defect of an individual , which results from disorder or restriction of life functioning, owing to which a person can fulfill only restricted role in society or cannot fulfill it at all (depending on age, sex, social or cultural environment). There are marked out the following important aspects of this concept. Individual or his (her) surrounding pays too great attention to those deviations from standard, which were found in anatomical structure, function or character of functioning. Evaluation of such deviations depends on cultural norms, so as a person can manifest social insufficiency in one group and do not show it in other ones, considering time, place, status or role of an individual. ICN contains classes of after effects of chronic diseases and disability (see table 1).

Table 1

International nomenclature of disorders, restrictions of life functioning and social insufficiency (ICN)

Classes of of diseases' and traumas after effects		
After effects on organism's level	After effects on individual's level	After effects on personality's level
Disorders in organism's structures and functions 1) mental 2) other psychic ones 3) speech 4) hearing and vestibular 5) eyesight 6) visceral and metabolic 7) motion 8) causing ugliness 9) general	Limiting of life functioning and reduction of workability, under which it is possible: 1) adequate behavior 2) communication 3) movements 4) motion of upper limbs 5) control of body 6) self provisioning 7) situational reduction of workability 8) realization of special skills	Social insufficiency, conditioned by inability for: 1) physical independence 2) mobility 3) practicing ordinary functioning 4) studying 5) professional functioning 6) economical self-sufficiency 7)integration in society

For implementation of ICN in practice of rehabilitation aid to population in different countries at WHPO Committee of experts was formed and its specialists saw the problem in several directions [9, 10]. Under clear reasons with rendering aid to patients, attention is paid to acute diseases, which include such diseases that result in recovery, maintaining of structures and functions as well as workability without any distortion of personality's status and basics of life functioning, human system of values and methods of their realization. Accordingly, doctor often feel himself free from further observations of patients and patient fells the same concerning doctor's services. The other case, if diseases are chronic, which become more frequent in all countries of the world. With chronic diseases as well as with disability the state of human organism changes owing to appearing morphological and functional deficit; also abilities for life functioning change, which determine progressing of personality.

ICN is understood as "key to rational control over chronic disease and disability". Relations between disease as pathologic process, which takes place in organism, and its after effects are rather difficult. In comments of WHPO experts' Committee there was present even idea about principal impossibility to classify all complexity of this phenomenon. But it became possible profoundly, from positions of sciences about man –"organism-individual-personality" – to classify all after effects by levels, reflecting the essence of a human nature: at biological (organism) level, at psychological (individual) level and on social (personality) level. They are three classes of after effects of chronic diseases and disability, which were reflected in "International nomenclature of disorders and restrictions of life functioning and social insufficiency".

Connections between every element within each class of after effects and between elements of different classes are actually rather complex. However, exactly determination of such connections for health related influencing on them is the task of rehabilitation treatment. Diseases, as well as their after effects cannot be regarded straightly or from

disease to insufficiency. There takes place also reverse effect, when social ill welfare results in restricting of life functioning and, accordingly, to functional disorders and diseases. Vicious circle is also possible, when one or several chains are decisive both concerning after effects of disease and increasing of this disease's clinic or progressing of new one.

Besides, as on to day there are problems of determination of concepts, reflecting the essence of diseases' after effects; rather important is adequate terminology. ICN was presented as a document of WHPO in English and French; in countries, which adopted ICN, translations were used; and in these translations authenticity of terms, classifying classes of after effects, is not always observed. Technology of evaluation of measurements, quantitative, exat definitions of any after effect of disease are closely connected with it. In our opinion it is necessary to distinguish concept "disorder of functions", "restriction of life functioning" and "social insufficiency", because clear definition of these concepts and full fledged determination of after effects, connected with them, have great legal importance. It is connected with the fact that in practice there appears demand in legal evaluation of level of "disability" (as per ICN) – physical, psychological and social losses as results of reasons of disease. Adequacy of terminology of nomenclature, coordinated understanding of terms is important in organization of rehabilitation process and development of its scientific methodology on the base of international cooperation.

As per ICN single concept of disease's after effects is reduced to the following. In human organism some deviations from standard appear, both in-born and acquired later. Different xeno- and endogenous etiological factors influence on a person and start cause functional and structural pathological changes of organism. Pathologic changes can be visible and invisible. Visible pathological changes are interpreted as "symptoms and signs" and are components of clinical progressing of a disease. Above given data witness that disease is the following sequence: etiology – pathology – manifestations.

Specialists distinguish "clinical state" or personal understanding, that he is ill or has some disorders. Depending on symptoms and disorders that result from disease person's behavior and functioning can change, i.e. there appears reduction of life functioning, including disordering of workability. Disease result in reducing of life functions, functional activity and individual's functioning and, further, disorders at personality's level. When disease results in reducing of person's life functioning, it acquires social character and finally results in social insufficiency of a person [6].

Specialists mark out the following after effects of a disease: disorders – materialization of pathological processes, restriction of life functioning (RL) – manifestations and objectification of pathological process and social insufficiency – socialization of disorders and RL of a person.

In estimation of health disorders – it is any loss or abnormality of psychological, physiological or anatomical structure or physiological functions; it is deviation from standard in a person's biological state and determination of characteristics of this state are given by doctors, who can make conclusions about any deviations in physical or mental functions, comparing them with standards [13].

ICN recommends nine main sections of abnormalities (see table 1), which are characterized by loss or deviations from standard organism's physiological functions and which can be temporary or constant. These disorders include abnormalities, defects or losses of limbs, any organ, part of tissue or other parts of body; defects of functioning of systems or mechanisms, including mental functioning.

Ordinary human functioning is integration of psychological (psychic), physical and social functions, which function as a single system. RL- is any restriction or absence, resulted from insufficiency of ability to fulfill I functioning in standard for age and sex limits and, being a connective link between disorder and social insufficiency, is a component of complex or integrated kinds of functioning, which are usual for an individual, such as fulfillment of different tasks, mastering of knowledge and etc. RL, as abnormality, can be temporary or constant, recoverable or irreversible, progressing or regressing. RK can also be as psychological response to physical, sensor or other disorder. RL in everyday life is reduced to hindering of individual's existence and functioning. In compliance with ICN RL also includes the following abilities: self-servicing (ability to maintain primary, effective,, independent on other persons existence, including functions of personal self care and other every day functioning, personal hygiene; ability to move independently or overcome obstacles, to keep balance in the frames of domestic, public and professional functioning; ability to study, i.e. to receive and teaching of knowledge (general, professional and so on); having skills and habits (social, cultural, domestic); ability for labor functioning, i.e. ability to fulfill work in compliance with requirement, content, scope and conditions of the fulfilled work; for independent orientation in environment, for perception and analyzing of own state and appropriately respond to changes of circumstances; ability for communication or contacting with people, maintaining of usual public relations with receiving, processing and transmitting of information; ability to control own behavior, i.e ability to be conscious and adequate in everyday life and in responses to social-legal norms [9].

Social insufficiency (de-adaptation) is socialization of disorders or restriction of life activity, resulted from some deviation in health state, from inability of an individual to meet social norms. A person with social insufficiency becomes unable to play the so-called "life roles" (criteria of survival); ne (she) becomes too dependent on medical or social establishments [2, 15].

Considering the fact that social insufficiency results from abnormalities or RL, person can play only restricted role in life of society or can not play any role. Conception "social insufficiency" includes three aspects: too great attention of an individual or his (her) surrounding, to deviations from standards, which take place in anatomy, function

or in character of functioning; consideration of time, place, status and role of an individual, under which appraisal of deviations depends on group's or society's cultural norms and in connection with which a person can be socially insufficient in one group but be quite sufficient in other; appearance in group of an individual with health related deviations from norm is accompanied by negative attitude [1, 16].

In compliance with ICN (see table 1) specialists distinguish social insufficiency (de-adaptation) resulted from restriction of physical independence, mobility, ability to fulfill usual activity, ability to receive education, vocational education, economical independence, ability for integration in society.

As example, we can mention characteristic symptoms of social insufficiency, which results from restriction of ability for education: normal education; intermittent education, when educational process is interrupted by staying in hospital; release from some kinds of functioning (inability to participate in in some kinds of education or professional training, normal work but with shortened work hours or work week); education ot vocational training, including application of auxiliary means, means of technical aid; education and vocational training, including combination of usual teaching methods and technical aids; education and vocational training, which are possible only with the help of special technical means; inability to receive education.

In literature there exists great number of works, devoted to attempts to classify RL depending of heaviness of abnormalities. For example, L.S. Gitkina et al. [4] classified RL depending on abnormalities' heaviness into 5 functional groups: light, moderate, significant, strongly expressed and full disorder. Other specialists prefer 3 stage gradation of RL heaviness. In many countries of the world ICN was accepted as high quality tool of organization of state's functioning in different health related branches. For example, in France, owing to application of ICN, they achieved higher results than it was earlier, especially with solution of social care addressed distribution. In Germany and Netherlands ICN was used for evaluation of patients and disabled workability. In Belgium and Italy it was used for enriching of communicative conditions of disabled people's life. In Switzerland ICN helps to solve insurance problems. However, in these and in other countries (USA, Canada, Spain, Great Britain, China, etc.) this international classification is recognized as having wider significance [1]**.** As example, we can supply using of ICN in Russia, where this classification was accepted, mainly, as conceptual standard of solution of disabled person's problems. On this base, with the help of advanced international experience, they upgraded governmental Russian system of rehabilitation of persons with steady absence of workability. In Russia medical labor expertise system, which appraises workability, was transformed into medical-social expertise, naturally combined with rehabilitation system and single governmental system of medical-social expertise and rehabilitation of patients and disabled. In 1991, in Russia principles of ICN in evaluation of steady after effects of diseases and traumas were put in the base of children's disability determination in the process of medical-social expertise. Later, in 1997 this approach to determination of disability was expanded to adult population of the country 1*,* 8].

In opinion of many specialists, including WHPO experts, ICN, which was recommended to world community and published in 1980, requires upgrading. First of all it is connected with the fact that it does not elucidate role of social and physical environment both in formation of disease's after effects and in their overcoming. This fact is regarded as advantage of purely medicalization of disablement. Detail analysis of all external in respect to human organism and personality, to natural and cultural (social, economical) conditions of appearance and development of disease and, at the same time, overcoming of all combination of disease's after effects shall be recognized as necessary. Besides, ICN of 1980 elucidated and appraised, mainly, after effects of disease, which are always characterized by ruining. However, estimation of patient's and/or disabled person's state as well as determination of his rehabilitation potential require determination of recreational reserves' degree or compensation of disorders and restrictions, present as no that moment, and estimation of individual dignity of personality.

In 2001, 54th International assembly of health protection, after changing of strategy of medical approach to social direction, basing on results of long-term tests, adopted "International classification of functional limitations of life functioning and health" (ICL), which, unfortunately, like ICN was not adapted to conditions of Ukraine and even was not translated into Ukrainian. ICL was translated into Russian and adapted in St. Petersburg advanced training institute of medical experts [7]; in SRI of social hygiene, economics and management of health protection, named after M.A. Semashko, RAMS [10]. For distribution and adaptation of ICL (2001) it is necessary to have official permission of WHPO and in this connection, when presenting of this classification's data, we used materials of M.V. Korobov et al [17], and data of A.V. Potapov, O.V. Sergiyeni and T.G. Voytchak [5, 11, 12].

Substantial distinction of new classification from earlier adopted is that it regards in integrity such states and processes as: health, disease, further progressing of structural disorders and organism's functions as well as need in appropriate rehabilitation measures [17, 19, 20, 23]. In ICL it is also noted that conception "health" actually includes all aspects of human life (psychic, physical and social), which engage certain information field, which, in its turn, is divided in separate elements, called health domains and domains, connected with health (see table 2).

Table 2

International classification of functioning, limitations of life functioning and health (ICL)

Components	Part1: Functioning and limitation of life functioning		Part 2: Contextual factors	
	Functions and structures of organism	Activity and participation	Environmental factors	Personal factors
Domains	Organism's factors Organism's structures	Spheres of life functioning (tasks, actions)	External influence on functioning and limitation of life functioning	Internal influence on functioning and limitation of life functioning
Parameters	Changes of organism's functions (physiological) Changes of organism's structures (anatomical)	Potential ability to fulfill tasks in standard conditions. Tasks' fulfillment in real life situation	Influence of social environment, of relations and settings	Influence of personality's features
Positive aspects	Functional and structural wholeness	Active participation	Factors, making fulfillment easier	Is not used
Negative aspects	Disorders Limitation of life functioning	Limitation of functioning Limitation of ability for participation	Factors, making fulfillment more difficult	Is not used

In adopted classification domains contain information, which rather completely reflects functioning of an individual on physiological, psychic (personality) and social levels. In ICL there are new qualities of life functioning, videlicet "activity" and "participation", in which "reductions or losses of some abilities at level of personality's potentials, at level of realization of these potentials in social life with the help of any supporting measures or in usual for individual conditions of life functioning are grouped" [5, 21].

Alongside with it there were specified some domains, which reflect state of organism's functions and structures; such qualities as activity and participation are described in all aspects of life functioning. Besides, all ICL domains are presented both in positive and negative aspects. RL is appraised by 5-points scale: from 0% (absence of any problems) to 96-100% (expressed limitations). In adopted classification there was introduced generalized concept of RL of different levels of human functioning on physiological, individual and social levels, including disordering of structures and functions of organism, limitation of human activity and ability to participate in social life. Results of individual's RL examination permit to determine the received information in the form of certain codes (corresponding to codes of ICN-10). But coding of such information can be significant only in cases, when RL is determined (negative aspects of individual, considering heaviness of disorders of different functioning' kinds).

For better using of the classification unified factor of negative scale of disorders' heaviness was introduced. In ICL there is presented system of determination of heaviness of activity limitations and limitation of participation in social life and its application for composing of individual rehabilitation program [22, 23, 24, 25, 26, 27], its is a classification of health and all health related circumstances, in which "Standard regulations on creation of equal

opportunities for disabled persons" are realized and on the base of whose application it becomes possible to actually equalize right of healthy and disabled persons.

Conclusions:

Thus, analysis and generalization of data from special literature, international classifications and instructive-methodic recommendations witness about formation of new, modern instrumentation for determination of such health related states, which appear after chronic diseases and with disablement. Principles, embedded in international classifications ICN and ICL reflect targets and tasks of rehabilitation, in particular physical rehabilitation with chronic diseases and disabled persons. The presented above classifications can be successfully applied with evaluation of level of life functioning and health as well as the structure of rehabilitation process. Application of ICN and ICL elements will substantially increase effectiveness of rehabilitation aid to disabled persons and improve methodological approaches to application of physical rehabilitation.

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STUDY OF THE EFFECTIVENESS OF THE TRADITIONAL SYSTEM OF TRAINING 6-10-YEARS-OLD INVOLVED IN FOOTBALL

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Annotation. *Purpose*: to identify the degree of efficiency traditionally used in Ukraine, the organization and conduct classes on football with students 6 to 10 years. *Material*: the study involved 57 students, ages 6-10 years. Investigations were carried out through the use of Polar Team System. *Results*: the indexes of the pulse energy and the cost of various options for training sessions, traditionally held in the sections with the children in groups of initial training. Marked reaction parameters organism beginners to competitive load. Substantiated quantitative characteristics of the diet of children. The data of the comparative analysis of energy cost of training sessions and daily food intake of children. *Conclusions*: It was found that classes with beginners accompanied by the use of heavy loads, often diet does not provide full recovery in children.
Keywords: children, load, body, experience, settings, problem, training, football.

Introduction

It is well known that the main tasks of working with beginners in sports is creating a «base» of versatile preparation and strengthening their health [1, 2, 4, 6, 7, 10, 14]. As the leading experts approve, creation of such «base» is possible under condition of realization during this period of the certain features of preparation [5, 7, 10, 11]. It belongs to such features a necessity of realization versatile physical preparation of players and training techniques not only in the selected type of sport, but also other sports. At the same time, it should not be required from beginners the demonstration of stable motor skills during the training of technical elements - children should master the bases of the game techniques, and also receive a necessary skills [12]. One of the priority features of the preparatory process on the first stage are also mandatory application of game method, the inadmissibility of the use of large and heavy loads and full diet for beginners [9, 10]. Connecting with the previous information, it becomes actual the efficiency of realization of the characterized theory positions in the practice of children's trainings. Analysis of recent research and publications indicates a fragmentation and heterogeneity data obtained by other researchers on this issue [1, 3, 8, 15].

Work is executed according to the theme 2.8 «Perfection of sportsmen preparation in different groups of sports» Consolidating plan NIR Ministry of Education and Science, Youth and Sports of Ukraine in the sphere of physical culture and sports in 2011 - 2015.

Purpose, tasks of the work, material and methods

The above-stated determined the objective of the work – on the basis of experimental researches to reveal a degree of efficiency the training system traditionally used in Ukraine for 6-10-year-olds schoolchildren engage soccer. In researches which were spent under direction and together with the professor I.G. Maksymenko, following methods have been used: the analysis of Ukrainian and foreign literary and the Internet-sources, pedagogic supervision, methods of mathematics statistics, the heart rate monitor (pulsometry) and registration of parameters of power inputs (using the system «Polar Team System»). By the plan of researches based on the usage of «Polar Team System» defined pulse (total quantity heart rate of the sportsman for one employment) and energy (quantity of the energy spent by the sportsman for employment) costs of different versions of sport activities which traditionally spend in Sports school and in varied sections with beginners. On the basis of registration the indicators data on heart rate and the energy expenditure have also studied the body's response to children competitive load, which are used in the preparation of the players. It was also estimated a number of calories which Ukrainian schoolchildren receive daily through the diet. After the generalization of the received data, it has been carried out the comparative analysis of the power cost of training employment and the daily food allowance of beginners. 57 students have taken part in the researches in the age of 6-10 years.

Results of the research

During experimental researches it is established that at the stage of initial preparation of children which specialize in soccer and mini-soccer, the usage of the loads are inadequate to age features of beginners takes place. The realization of such work is accompanied by rather high index of heart rate and energy of children. At the same time trainings with use of such loads are characterized by the raised duration that contradicts to the recommendations of leading experts concerning construction of trainings at the given stage of long-term preparation [7, 10]. So, during studying the influence of training employment which traditionally spends in Lugansk Sport schools, on an organism of 6 - 7 years old soccer players, the following is established (tabl.1). The beginners' participation in typical for this age group activities, are characterized by such indexes indicators: energy consumption by each player, on average, up 277.7 kcal; the pulse training cost, on average, each player equals 10117.5 bpm; the averages heart rate max reach 208 4 bpm^{-1}. During researches the content of the typical activities which in Sports school on soccer usually last 1 hour - 1 hour 10 minutes and consist of two parts: 1) execution of the enlarged volume of exercises on mastering by techniques of the game and some games and relay races (duration of this part of employment up to 30 minutes); 2)

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participation of beginners in bilateral game by duration 20 - 30 minutes. The analysis of the similar parameters fixed in activities with 7 - 8-years children who visit section of mini-soccer club, allowed to reveal the following.

Table 1

Average values of characteristics of the pulse and the expenses of energy of 6-10-year-old soccer players, registered in week microcycles while performing the various loadings (n=57)

Age of soccer players years	Loadings' orientation / intensity of work, %	Training duration, min	Studied indicators							
			Pulse min, beat·min^{-1}		Pulse max, beat·min^{-1}		Training pulse cost, beat		Energy expenses, kcal	
			$\overline{x}$	m	$\overline{x}$	m	$\overline{x}$	m	$\overline{x}$	m
6-7	Anaerobic and aerobic / 50-95	70	124,8	2,7	208,4	4,2	10117,5	94,8	277,7	12,3
6-7	Anaerobic and aerobic / 65-95	95	125,7	3,0	208	4,1	12124,7	95,8	342,7	13,8
7-8	Anaerobic and aerobic / 50-95	75	120,4	3,1	209,4	3,8	11307,5	97,9	302,4	14,1
7-8	Anaerobic and aerobic / 65-95	85	122,8	3,4	209,4	3,9	12300,1	101,1	357,1	14,9
9-10	Anaerobic and aerobic / 50-95	115	118,1	4,8	210,1	6,2	18149,9	117,3	777,4	24,3
9-10	Anaerobic and aerobic / 65-95	75	123,9	3,5	205,1	4,4	12058,3	100,8	514,9	15,7

Energy consumptions of the organism 7 - 8-years child on one training from the program, on the average, make up to 302,4 kcal. At the same time, the average pulse cost for such training equals 11307.5 bpm, and the mean values of heart rate max reach 209.4 bpm^{-1}. Found that the typical circuit training for beginners who play soccer and mini-soccer, are virtually identical. It is revealed, that typical employment on mini-soccer for 7 - 8-years beginners which last 1 hour - 1 hour 15 minutes, consist of two parts. In the first part of the children are working with the focus on mastering the technique of playing and development of physical qualities (lasting up to 35 minutes). At the same time apply a small amount of traditional mobile games. The second part is usually devoted to bilateral game in mini soccer. Except of studying the reaction to an organism 6 - 8-years sportsmen on the different loads, similar research it has been lead and at participation 9 - 10-years players who are engaged in the Sport School [13] and sections for one year. As an example, the quantitative characteristics of energy and heart rate recorded in a typical training session (total duration 1 h 55 min warm-up, individual exercises with the ball, and exercises for developing basic physical qualities - intensity of training 50 - 85%, duration of 1 hour, two-way game duration of 15 min, exercises for flexibility and restore breathing - duration 10 minutes) with the athletes who specialize in mini-soccer. During such training, each player spends, on average, 777.4 kcal, means values of heart rate max equals 210.1 bpm^{-1}, a pulse value of such training, on average, is 18,149.9 beats.

During the analysis of traditional approaches to construction of the training process at the stage of initial preparation it is also established, that, being engaged 3 - 4 times the week, one of them is on Saturdays, the beginners take part in training games. For example, in soccer Sports School the plan of carrying out of such competitions is the following: after warm-up children part at teams for 5 - 6 persons; each team plays on the area for 10 minutes, then beginners have an active rest 15 - 20 mines - carry out exercises on restoration of breath, on flexibility, juggle with a ball, etc; after the termination of productive leisure the command again leaves on the area. Usually these lessons last 1 hour - 1 hour 30 minutes, so the players of one team play 2 - 3 times in 10 minutes on the pitch. It is also established, that the continuous training (or with one break) participation of beginners in bilateral games which last from 30 up to 50 minutes. As an example, there are the parameters of power inputs and heart rate, registered at beginners, during participation in training games. So, the participation of 6 - 7-year-olds training in-two-way game duration 1 hour 35 minutes (being on the area during a match 3 times for 10 min with 20 min pauses active recreation) is characterized by the average cost of energy at 342.7 kcal, quantitative values of the total value of the pulse loads - 12124.7 bpm and max heart rate averages at 208 beats min. To participate in the same training session lasting 1 hour 25 minutes (warm-up, 2 ×

20 min halftime, 15 minutes break in the form of recreation, exercise on recovery) 7 - 8-year-old athletes who specialize on mini-soccer, on average, spend 357, 1 kcal, while the average cost of such an exercise pulse is 12,300.1 beats and quantitative characteristics of heart rate max, on average, equal to 209.4 bpm^{-1}.

During the research of similar parameters at 9 - 10-years beginners which are engaged in mini-soccer for the first year, such parameters were recorded. During participation in the bilateral game - inning 2 × 20 minutes of «pure» time, rest for 1 minute every 5 minutes of the game, the total duration of the study 1 hour and 15 minutes - each competitor, on average, «burns» 514.9 kcal; averages HR max equals 205.1 bpm^{-1} min and the pulse cost of such games, an average of 12,058.3 beats. The comparison of the performance with the varying results of similar studies conducted with older athletes [1, 3, 5, 14], indicates that in modern sports games the initial training phase is characterized by fairly frequent application in the trainings with significant children and sometimes large loads. According to the plan of research, for the definition of parameters of power inputs and heart rate, connected with performance by beginners of different training programs and participation in competitions, the quantity of calories that average visitors of sports sections get every day while feeding was determined. So, while studying the food allowance revealed that 6 - 7-years children-visitors of Lugansk soccer Sports School, on the average, daily receive: for a breakfast - 300 – 320 kcal; for a dinner - 510 - 540 kcal; for lunch - 150 - 170 kcal; for a supper - 700 - 750 kcal; as a whole within day (considering consumption of different drinks) - 1760-1830 kcal. At the same time, according to information from various experts, it is known, that at the given age of an expense of energy on maintenance of the basic exchange, for specifically-dynamic action of food stuffs and on performance of different household actions can make 1200 - 1400 kcal a day [9, 10]. On employment by different physical exercises at school (an active break, physical exercises) children during the day can spend up to 200 calories. In this case, as set out in experimental studies, energy consumptions to perform outlined above training programs and to participate in bilateral games can reach 350 or more calories. Thus, the general daily expenses 6-7-year sold children who visit football section can make 1855 and more kcal. And from prepared food average Ukrainian child of 6-7-year-old receive around 1760 - 1830 kcal. Similar discrepancy of quantity of the kcal received with food stuffs and power inputs of children has been fixed during the study of 9 - 10 - year old beginners' diet. Thus, it is clear that the results obtained in the process of food calories almost do not provide enough energy to the body of most Ukrainian children who visit the Sports School and sports clubs. On the background of insufficient provision of energy to children who do inadequate physical activities can lead to a depletion of the organism. The previous statements point to the necessity of revision the traditional approaches to organizing and conducting activities with children. In our opinion, such review may be connected with performance of two conditions: 1) it is necessary to apply the physical activities that are adequate to age features of children; 2) it is necessary to provide the preparation of an adequate food allowance of children.

Conclusions

1. During experimental researches it is established, that system of carrying out trainings traditionally used in Ukraine for soccer and mini-soccer with children of 6-10 years has a number of lacks. Such lacks are primarily associated with the frequent use of heavy loads: 6-7-year-old soccer player on one standard workout spends, on average, to 342.7 kcal at average values of heart rate max at 208 $bpm^{-1}$and heart rate for the amount of exercise to 12,124.7 bpm.

2. It is revealed that the energy needs for children due to the implementation of standard training programs are not fully satisfied with the diet, which is used by the average Ukrainian family. Thus, for example, the average power of every day diet of 6 – 7 years old soccer players make 1760 – 1830 kcal, that is an average daily energy consumption, taking into account training exercises for the beginners to reach 1855 and more kcal. Stated above causes an indispensability of review of the traditionally developed approaches to the organization and carrying out of employment by soccer and mini-soccer with children of 6-10 years.

Further investigations provide definition of reaction to an organism of young sportsmen on various training and competitive loads which are used in preparation of children and teenagers of 11-17 years. The recommendations in the given direction of researches can be connected with use of the received parameters at the first stage of long-term training in order to improve the quality of the preparation process.

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FEATURES OF CADETS' ADAPTATION UNIVERSITIES UKRAINIAN INTERIOR MINISTRY TO STUDY THE ART OF SAMBO

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Annotation. *Purpose*: to study the problem of adaptation of students to the study of throwing techniques Sambo in the educational process of professional orientation. *Material*: the study involved 53 first-year cadet. Also 8 teachers - experts. *Results*: the initial study of the features of self-defense techniques without weapons in the universities of the Interior Ministry of Ukraine. The factors that impede the development of technical action: lack of preparedness of students on basic psychophysical parameters, the desire to avoid pain when you fall; big breaks between classes. Developed a set of special exercises aimed at improving the mental and physical qualities of the future police officers. Complex promotes adaptation to the study of self-defense techniques without weapons. An efficiency of specific exercises to improve motor skills formation and neutralization of negative factors. *Conclusions*: recommend the use in the educational process special physical training specific exercises. Exercises gradually become more complex in structure as close as possible to the difficult coordination in unarmed combat.
Keywords: willingness, adaptation, self-defense, throw, coordination, balance, sensation, space, motor skills.

Introduction

Formation of skills of self-defense without weapon is one of the most important tasks of professional training of modern law enforcement officers [1]. I. Zakorko stated that among different means of physical influence sambo techniques are the most effective means of defense against attacks without weapon in situations of power character. Mastering of sambo techniques and formation of skills to apply techniques for solution of service tasks facilitate increasing of personal security of home affairs officers (HAO) and gives them advantage in extreme situations [2, pg 142-144].

As a rule mastering of sambo techniques is started by law enforcement officers in the process of practical trainings on special physical preparation at higher educational establishments (HEE) of HAM of Ukraine. Formation of skills to fulfill throws is a complex pedagogic process, which puts forward significant requirements to psycho-physical qualities of future law enforcement officers and causes certain difficulties. Basing on analysis of certain works [2, 3, 4, 5, 6] we can note that quality of mastering sambo techniques at SPP trainings to large extent depends on special gradual adaptation of cadets' psychic to complex coordinated movements and overcoming factors, hindering trainings. Among factors, which negatively influence on formation of technical actions, we should mark out the following: 3

1) Insufficient readiness of cadets by main physiological parameters, in particular low level of coordination and middle level of physical fitness;
2) Wish to avoid pain, caused by falling down on mat, conditioned by absence of skills to ensure self security;
3) Long breaks between trainings on sambo throws.

Some researches, in particular F. Yevtushov, write that training of means of physical influence "by its content shall be similar to sport training like in martial arts, professional or Olympic sports" [7, pg. 112]. But main task of training of future law reinforcement officers is not participation in sambo competitions but self defense against not armed and may be armed attack of criminals during fulfillment of service tasks that require certain changes in training process. On the base of analysis of actual practice of law enforcement officers' service functioning we think it would purposeful to consider this practical experience in training of self-defense techniques.

Considering the above said we think that problem of gradual leading of cadets to mastering of physical influence means and, in particular formation of sambo throws' technique, requires increasing of professional orientation of training process and is urgent and serves comprehensive elucidation.

The research was carried out in compliance with plan of scientific & research work for 2013-2014 academic year of Lugansk state university of home affairs, named after Ye.O. Didorenko.

Purpose, tasks of the work, material and methods

The purpose of the research: in this work we made an attempt to analyze cadets' adaptation to mastering of sambo throws' technique and determine application of auxiliary complex-coordinated movements of professional orientation in training process.

The methods of the research: theoretical analysis of scientific literature, testing, pedagogic observation, expert evaluation.

Organization of the research. The research was conducted on the base of departments of tactic-special training and special physical and firearms training of Lugansk state university of home affairs, named after Ye.O. Didorenko. In the research 53 first year cadets took part, from them – 28 cadets – experimental group (EG) and 25 cadets – control group (CG) and 8 instructors, who were experts.

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Results of the research

On the base of pedagogic observations over trainings on special physical preparation at HEE of HAM of Ukraine it should be noted that formation of self-defense and martial arts skills to certain extent has rather simplified character. For example, in introduction part of training usually general exercises on the spot and in motion, gymnastic exercises, track and field and power exercise prevail. Such warming up ensures certain motion functioning, which shall prepare cadets for main part of training. Undoubtedly the task of warming up is solved, but professional component – application of special exercises, having applied character is rather limited.

Traditionally in HAM HEEs training of sambo throws is conducted at second year of study. As per Order of HAM of Ukraine No.318, dt. 13.04.2012, training of special techniques at HEEs ensures mastering of throws "back tripping", "front tripping", throws over hip, over shoulder, by holding of legs, undercut. It should be noted that fulfillment of the mentioned techniques in sport variant is rather useful, but we think the main task is to professionally orient them, in particular to apply these throws for defense from un armed and armed attacks , for releasing from holds and fulfillment of other power tasks.

Application of throws for practical service purposes can be possible only if law enforcement officer has steady skills of their application, fulfils techniques firmly, in "speed-power" mode with striking "weakening" blow and further arresting of criminal.

During recent years ideas about professional orientation of law enforcement officers and filling of training programs with professional context have been appearing rather often. In first turn it means re-understanding of approaches to training of modern law enforcement officers on the base of consideration of actual requirements of service functioning and criminal situation, which has formed recent years.

On the base of analysis of literature sources [7, 8, 9, 10, 11, 12] and practice of service activity we think that training of home affairs officer to self-defense shall combine in one model:

Basic actions of martial arts (block, blow, kick); ногой);

1) Releasing from holds and wraps;
2) Throws (back tripping, over hip and etc.);
3) Arresting of criminal in lying position with handcuffing.

We also think that application of methodic approach, stipulating combination of main elements of power fight with criminals, in training process will permit to improve law enforcement officers' ability for practical usage of techniques.

On the base of analysis of special literature [13, 14, 15], talks with practicing officers and instructors of special training departments we worked out and tested complex of special exercises, oriented on creation of pre-conditions for qualitative mastering of special influence means, in particular sambo throws' techniques.

The course of the experiment.

Specific feature of our exercises is the fact that this complex was worked out for usage nearly from the very beginning of discipline's "Special physical training" mastering. For example we included in preparatory part of practical trainings (warming up) during first and second semester the following:

1) Special acrobatics – the simplest acrobatic exercises, oriented on formation of self-guarding skills with fallings down on mat from different positions, throws over right (left) partner's shoulders. Gradually tasks were complicated with combining of the mentioned above elements with moving in combat stance: self-protection-stance-block, self-protection-stance-block-imitation of putting legs for throw over hip, shoulder, back tripping and so on.

2) Special defensive actions – block for fulfilling of blow and blocks for fulfilling of throws. It should be noted that these exercises are very important because between these two kinds of blocks there is substantial difference. We supply one example. Adversary fulfills blow with fist from above in head; cadet responds left arm block and step back, than imitates right hand blow in adversary's head. In second variant cadet steps forward with block and imitates initial stance for throw over shoulder. Thus, in first variant cadet trains block, permitting moving to counter attack and in the second block shall create favorable conditions for throw.

3) Self guarding with gradual increasing of height of falling down (cadet fulfills falling down over lying partner, over kneeled partner, over partner, who bent in stance, over partner in upright stance with hold of hand.

4) Special motion exercises, imitating throw, in pairs. Among such exercise, it should be marked out imitation exercises on the spot and in movement, travelling with partner and in stance. These exercises are oriented on development of coordination. Enriching of individual arsenal of movements, strengthening of muscles, required for throws.

Specific feature of the offered approach is the fact that transition for training of new element is realized not in phase of improvement of previous action but even earlier- at stage of formation of initial skills. Such approach facilitates quicker formation of motion skills and creating, at initial stages of trainings, of pre-conditions for future combining of separate elements in one model.

For evaluation of special exercises' influence on formation of self-defense skills we carried out pedagogic diagnostic. CG and EG cadet were offered complex of tasks, which considered content of initial stage of trainings, i.e. implying already available level of technical fitness. Experts evaluated coordination and motion skills of EG and CG cadets by 5 points' scale. With the help of questioning we analyzed some subjective indicators, which, in our opinion, also influence on quality of training process. The received data are presented in table 1.

Table 1

Dynamic of coordination's indicators in the course of experiment

№	Indicators	Initial stage		Finalizing stage	
		CG	EG	CG	EG
1	Coordination	3.4	3.1	4.6	8.2
2	Balance	4.1	4.2	5.4	9.1
3	Sense of space	2.9	2.7	4.5	7.8
4	Technical mistakes in fulfillment of exercises	1.6	1.5	3.2	4.9

Analysis of coordination's indicators of control and experimental groups' cadets witnessed that in EG there happed certain improvement of coordination abilities. Alongside with in CE there was registered substantial increasing of all other main parameters that witness about effectiveness of offered complex of special exercises.

Conclusions:

1. On the base of analysis of literature sources we found that quality of sambo techniques' mastering at SPP trainings depends to large extent on special gradual adaptation of cadets' psychic to movements with complex coordination. Among factors, which make formation of technical actions more difficult we marked out the following: insufficient readiness of cadets by main psycho-physical parameters, wish to avoid pain, caused by falling down, long pauses between trainings.

2. On the base of analysis of actual practice of special physical training in HEEs of HAM of Ukraine we stated that training of techniques of self defense without weapon is often realized in simplified way.

3. It has been proved that process of special training of law enforcement cadets shall combine in single model basic actions of martial arts, techniques of releasing from holds and wraps, throws and techniques of criminal's arresting in lying position with handcuffing.

4. We have worked out a complex of special exercises, oriented on improvement of psycho-physical qualities of future law reinforcement officers, which facilitates adaptation for training of self defense without weapon. This complex includes special acrobatics, special defense actions, self-guarding with gradual increasing of height of falling down, special movements in pairs.

5. We have experimentally proved effectiveness of application in SPP trainings of special exercises, which gradually become more difficult and are maximally approached to martial arts' techniques with complex coordination that facilitates improvement of quality of motion skills' formation and neutralizes negative factors' influence.

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METHODICAL FEATURES DISPENSING EXERCISE, USED IN EXTRACURRICULAR ACTIVITIES TO IMPROVE HEALTH STUDENTS

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Annotation. *Purpose*: to investigate theoretically substantiate experimentally verify technology aimed at improving the process of university students in extracurricular athletics. *Material*: the study involved 413 male students aged 21-23 years. Efficiency of impact studies using cross-country loads of aerobic and anaerobic focus on the physical health of men first mature age. *Results*: systematized and generalized materials literature. Developed programs for extracurricular classes jogging The level of aerobic and anaerobic productivity men first mature age. Experimentally substantiated health technologies for university students through the use of cross-country loads. The efficiency depends on the training mode and the energy consumption of energy. *Conclusions*: confirmed that aerobic and anaerobic capacity of the organism male students first mature age do not meet a certain level. These abilities require correction. This correction is more effective due to the development and implementation of health technologies, based on the use of extracurricular activities running exercises.
Keywords: aerobic, productivity, physical, health, jogging, exercise, anaerobic, lactate, productivity.

Introduction

Young people who enter higher educational institutions get under the pressure of unusual social factors associated with the necessity of creative mastering great amounts of information, and the need of formation of specific professional skills and practices, as well as novel conditions of students' life. First of all the feeling of discomfort appears with beginners. For convenience such phenomenon could be called inadaptability of young people for study at higher educational institutions that is connected with the reasons as follows [6]: difference between methods and organization of education typical for secondary school and those at higher educational institutions thus requiring additional self-determination in mastering material lectured; the lack of well-established interpersonal relations or in-team contact that is typical for any new team on the stage of its formation; destruction of earlier life pattern built during the years of school education together with formation of a new "higher school" pattern; troublesome entering a HEI associated with living in a students' hostel, leaving parents, and namely self-servicing, autonomous budget conduct, planning and arrangement of own study and leisure time, etc.

To overcome such "higher school" discomfort a young person has to spend much physical and psychic force. Physical training is designed to compensate such force losses, and to become an integral part of students' preparation to their future professional activity.

Purpose, tasks of the work, material and methods

Aim of the study includes theoretical substantiation and experimental verification of technologies directed to health improvement with university students in the course of extracurricular going in for light athletics.

Task of the study is to systematize and generalize information from sources, to develop the program of extracurricular training in health-improving recreational run, to investigate the level of aerobic and anaerobic productivity of organism among male students of the first mature age, and to provide experimental substantiation of health improving technologies for university students on the ground of run loads utilization.

Methods of the study: we investigated effectiveness of influence of training using run loads of aerobic and anaerobic direction upon physical health of male students of the first mature age, that is from 21 to 23 years old [13]. The choice of such cohort for study in run programs under investigation is explained by scientific information on the fact that the level of physical health with men of the given age established in accordance with relative index of maximal oxygen consumption ($VO_{2\ max}$) in average meaning is much lower than with women. The average value of $VO_{2\ max}$ with men is considerably lower than the safe health level while with women it substantially exceeds the one [1, 2].

Experimental and research work was conducted at Lugansk National University named after Taras Shevchenko Governmental Institution. The total number of 21-23 years old men students who took part in the study was 413, with 17 sports educators and doctors. In general, in the course of investigation we examined 413 male students of 21 to 23 years old of which 109 persons were going in for jogging during 24 weeks in accordance with programs developed. We totally used 7 programs their content being determined through training, conditions of energy supply of the work, and load level. Physical education of persons belonging to the eighth (reference) group was executed pursuant to educational program for HEIs of Ukraine including lessons according to curriculum twice a week plus an individual training. At the lessons we used exercises of light athletics, gymnastics, and sports and outdoor games. Examinations were conducted in stages: prior to training cycle, after 6, 12, 18, and 24 weeks from beginning as well as 6 and 12 weeks after termination. That allowed dynamics control in changes of data under investigation.

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Results of the research

Taking into account insufficient level of physical health with male students of 21-23 years old we developed programs of extracurricular training using run exercises for the abovementioned cohort of people.

The run training programs used in the work were developed considering as follows:

1. Methodic principles of physical education
2. Age and sex of persons under study
3. Health conditions of persons under study
4. Functional readiness of their organisms for physical loads.

At the same time we took into account scientific information gained due to analysis of literature. In the course of the lessons we provided monitoring of functional state of the persons under study based on their oral interviewing, external evidences of tiredness, data of pulse measuring, and arterial tonometry.

The proposed programs of lessons differed from the majority of generally known ones in their complex approach to the problem solution of physical health improvement with male students of the first mature age due to the fact that they included means and methods of influence upon aerobic and anaerobic (lactate) organism productivity [11, 12] that is well-known integral indices of the organism's functional state. Besides, the programs utilization excluded any possibility of health deterioration occurring because we considered functional readiness of any person under study to the programs execution.

Preliminary substantiation of expediency of the author's programs implementation was conditioned by:

- Determination of rational directivity of selected means of influence on people's physical health;
- Regulation of run loads in intensity and duration;
- Mode of energy supply of the run work;
- Training method;
- Periodicity of lessons;
- Determination of effectiveness of their influence on physical health.

Determination of rational directivity of selected means of influence and their regulation is conditioned by functional peculiarities of an organism and the level of physical health among male representatives of the first mature age.

Selection of mode of energy supply of run loads, training methods and periodicity of the lessons was done on the ground of analysis of special scientific literature and basic provisions of theory and methods of physical education.

The distinctive feature of the proposed programs was that they were executed in the zone of optimal range of inner work content depending on functional readiness of an organism to their execution [5]. The head form of health correction with male students of the first mature age was training lessons in run.

The lessons were conducted according to seven programs developed. The total duration of the whole training cycle comprised 24 weeks. Regardless of the program the structure of any lesson included as follows: a warming-up, a main part, and a conclusive part. The content of both the warming-up and the conclusive part was similar regardless of the program.

The warming-up 10 to 12 minutes long included breathing exercises and those of general development while the conclusive part up to 3 minutes long contained walking, breathing and muscle relaxation exercises. The essence of the main part of the lessons was run load.

Each program of run training was unique in the intensity of run load and training method that determined stimulation degree of aerobic and anaerobic processes of energy supply of muscle work.

An outer level of run loads was individual for each person under study as it was dependent on his organism's functional state especially on absolute value of maximal oxygen consumption ($VO_{2\ max\ abs.}$).

Irrespective of the program implemented the lessons periodicity was three times a week.

Beginning from the first lessons the outer level of run loads was continually growing during two weeks to reach the minimal value of the inner level (44 per cent of E_{max} for each individual.

Mutual relation between aerobic and anaerobic processes of energy supply during the run is determined by the work intensity: with higher intensity the share of anaerobic component is growing while that of aerobic is getting lower. Thus, depending on the program, persons under study were given intensity of run work expressed in per cent related to the absolute value of maximal oxygen ($VO_{2\ max\ abs.}$) consumption.

One of factors specifying effectiveness of physical training is rational dosing of loads [14, 15]. First of all, the values of physical loads must correspond to functional potential of an organism.

As a rule, an effectiveness index of health improving training is aerobic productivity of an organism for which correction we use to introduce cyclic exercises including run.

Optimal effectiveness of such training related to aerobic productivity is manifested for the work intensity on the level of PANO (threshold of anaerobic metabolism) where according to M.L. Pollock [8] and K.J. Shephard [9] the duration of such work is to be 10 to 12 minutes.

A.A. Viru with coauthors [3] proposes, regardless of organism's functional state, to establish mutual relation between intensity and duration of health improving training by means of special diagram (Fig. 1).

In this case the lessons' periodicity must comprise 3-5 times a week. O.A. Pirogova with coauthors [4] proposes graphical method for determination of optimal work duration depending of its intensity taking into account the level of a person's physical state that corresponds to the level of the organism's aerobic productivity (Fig. 2).

However, we think that with such method application relative values of maximal oxygen consumption ($VO_{2\ max}$) characterizing the level of physical state have sufficiently wide range, so they fail to consider the whole individual functional potential of an organism.

In this connection we believe it would be expedient to determine the inner volume of physical load based on parameters of optimal energy consumption range considering aerobic productivity of an organism using the method developed by Yu.M. Furman [5] (Fig. 3).

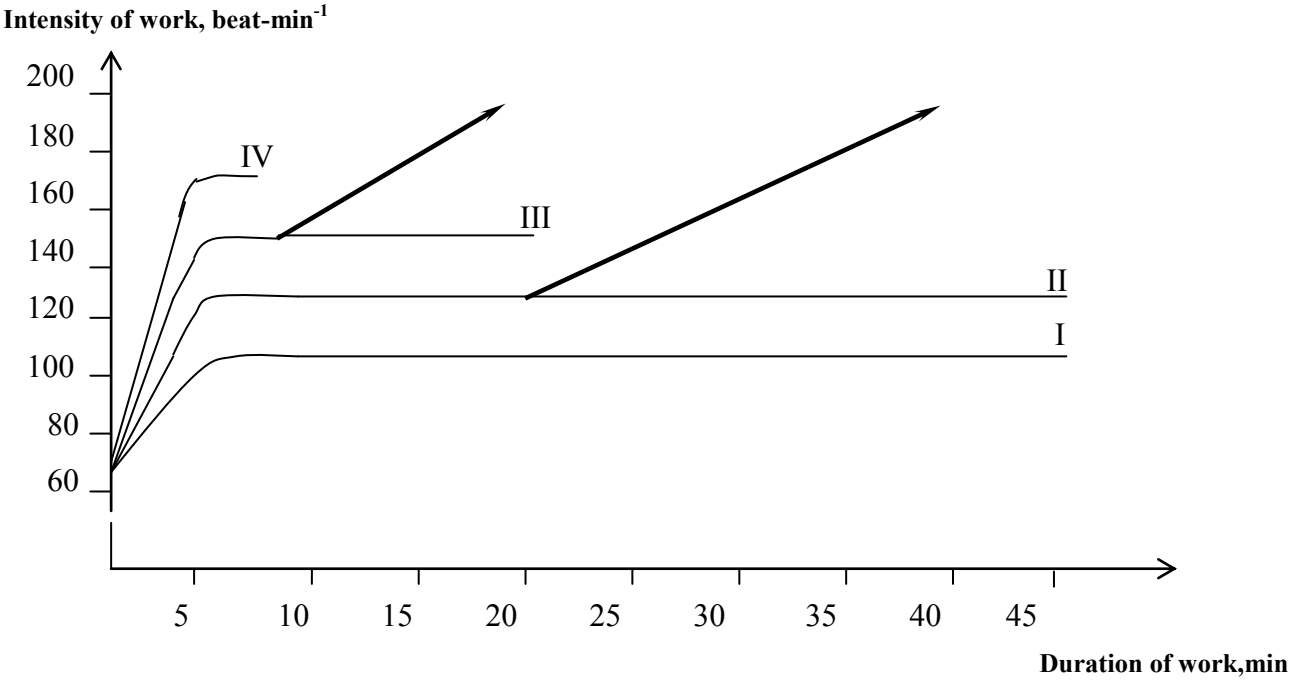

Fig. 1. Relation between the training effect of load and its intensity and duration

I – low load when the training effect is not demonstrated;
II – moderate load when the training effect (see an arrow) appears after 20 minutes of work to increase with its duration;
III – intensive load when the training effect appears after 8 minutes of work to increase with its duration;
IV – very intensive load when tiredness appears prior to the training effect.

This method is based on theoretical provisions on excitation physiology according to which functional potential of a human organism is determined by the manner it reacts on an irritant's activity. If we recognize the training load to be an irritant then depending on its value functional changes in organism are manifested in various manners.

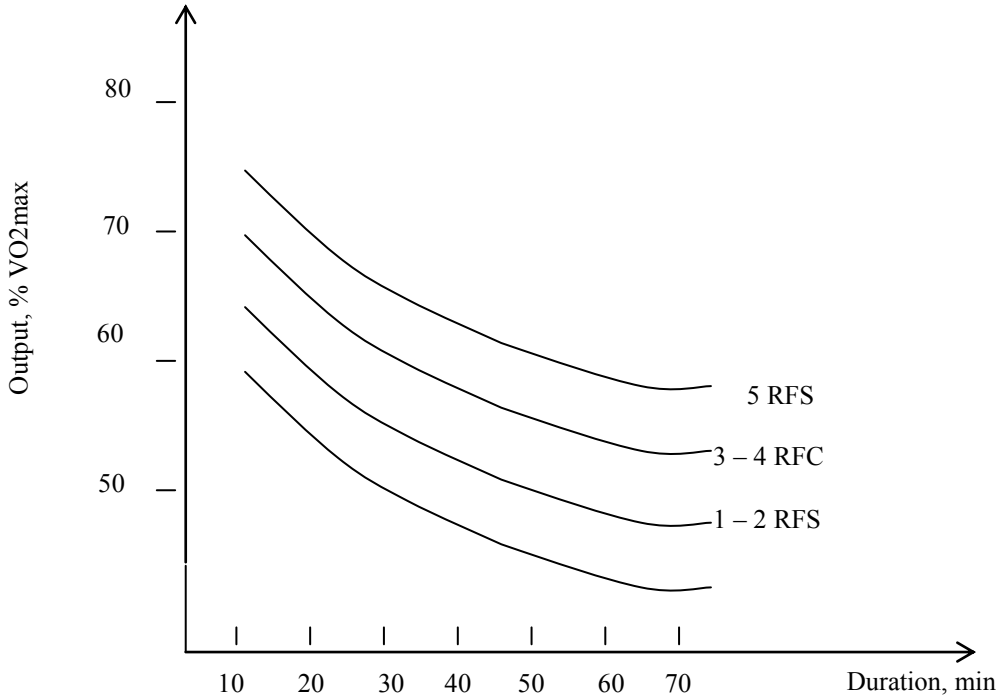

Fig. 2. Diagram for determination of physical load level values

A pre-threshold physical load application does not bring any training effect while excessive physical load can lead to negative changes in an organism. So, the value of physical load must be positioned within the optimal range between a minimal (threshold) and maximal allowable value. Minimal and maximal allowable value of physical load is determined by functional readiness of an organism to their execution, and the objective criterion of the readiness can be aerobic productivity that integrates functioning of such systems of organism as cardiovascular, respiratory, blood and others.

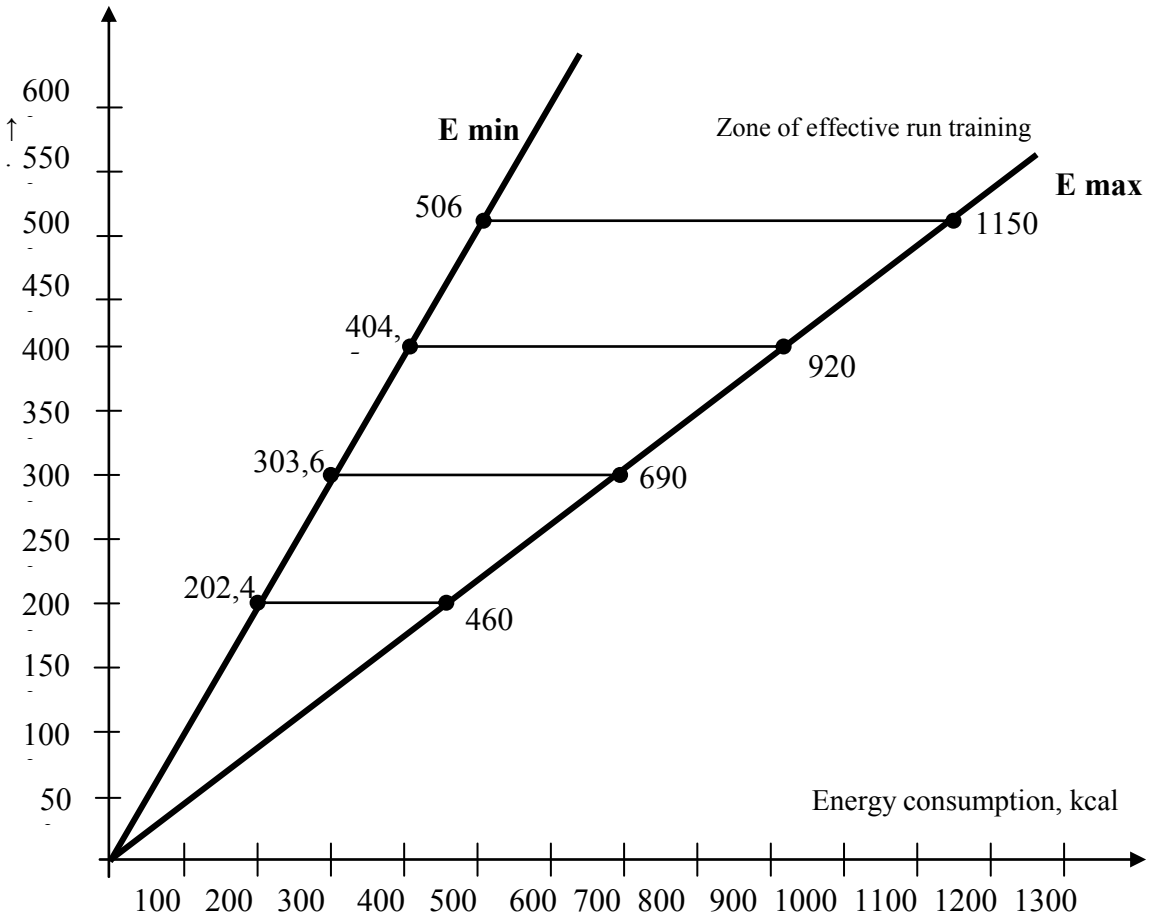

Fig. 3. Optimal range of energy consumption depending upon the value of maximal oxygen consumption ($VO_{2\,max}$)
E_{min} is the line of minimal energy consumption
E_{max} is the line of maximal energy consumption

The higher level of aerobic productivity the larger minimal value of physical load required for its support and elimination of detraining phenomena, and the bigger maximal allowable loads that can be executed by a person without initiating negative changes in his organism. Thus the growth of functional potential for the sake of its further development requires the growth of physical load in the optimal range.

The value of physical load is proportional to its volume and intensity. The physical load value indices are divided into two groups: outer and inner. Outer ones characterize its work in outward expressed dimensions while inner ones characterize correspondent reaction of an organism related to the work. When we speak of run loads then their outer volume is measured with such indices as duration of run work or its distance length. At the same time the inner volume is characterized by summarized energy consumption for the period of the work execution.

As for intensity of run load its outer index is run speed, and inner one is heart rate or energy consumption per a time unit. Thus, it is understood that inner volume and intensity demonstrate individual functional readiness of an organism for execution of loads of certain outer volume and intensity. So, executing loads similar in outer volume and intensity (for example, running same distance with same speed) different people demonstrate different inner volume and work intensity depending on their individual functional state. For persons with better functional state the inner volume (that is total energy consumption) and intensity (that is energy consumption per a time unit) is lower. And on the contrary, less trained people with poorer functional state have to execute larger inner volume of work. In this connection such load becomes a lower irritant for person with better functional state, and training effect can be absent.

That is why to provide the training effect with the growth of functional readiness of an organism we should increase the volume of minimal (threshold) load. Such increase can be achieved due to the work duration not changing

its intensity, or due to the work intensity not changing its duration, or due to the growth of both duration and intensity. In this case the maximal allowable volume of load is growing correspondingly.

However dependence of the training effect on energy consumption is general rule operating related to a certain intensity range because when we alter the latter thus the mode of energy supply we can influence the specifics of the training effect.

It is established that to increase the level of aerobic productivity of an organism with lessons' periodicity of tree times a week the minimal (threshold) value of energy consumption (E_{min}) must comprise about 44.0 per cent of the maximal allowable value of energy consumption (E_{max}). We calculate the latter using formula $E\ max = 0.23 \bullet VO_{2\ max.}$.

Such calculation of the optimal range of energy consumption must be done for each individual under study to provide the same value of physical load inner volume for each person within the zone of optimal range. Using information by L. Brouha [7] on energy consumption for various heart rates we can monitor compliance with requirement of run load within the zone of the optimal range.

One should state that energy consumption connected with execution of physical work is conditioned by the level of aerobic and anaerobic metabolism during its execution as well as aerobic metabolism directed to elimination of oxygen debt after the load termination. Here the more intensive work the higher speed of oxygen consumption with oxygen debt formation with its execution, and oxygen consumption after its termination. Thus for continuous method of training the energy consumption is identical to intensity and value of the outer volume.

When we use recurrent and interval method with higher work intensity then energy consumption is not identical with the value of outer volume, but it exceeds. It can be explained by substantial energy consumption not only during the work but in rest intervals conditioned by liquidation of oxygen debt. So this factor is to be taken into account determining values of the work inner volume provided recurrent and interval method of training is used.

To make determination of energy consumption optimal range for run training easier and more convenient we use a graphical method according to which the values of energy consumption correspond to those developed through calculation method [5] (see Fig. 3). As we can notice on the diagram the energy consumption is shown on abscissa axis while the absolute value $VO_{2\ max}$ is shown on ordinate axis. As soon as we know the $VO_{2\ max}$ absolute value we build a direct line parallel to the axle of energy consumption to get a segment limited with minimal (E_{min}) and maximal allowable (E_{max}) value of energy consumption.

Conclusions

Based upon experimental study and generalization of advanced experience by experts we developed the programs I to VII of extracurricular lessons including run exercises to provide fundamental data improvement of students' physical health. In accordance with intention we introduced run exercises to the background of programs I, III, and V for aerobic potential development while the background of programs II, IV, VI and VII contained exercises for primary stimulation of anaerobic-aerobic mechanisms. In the course of the programs development we took into account the following factors: methodic principles of physical education, age and sex peculiarities as well as health conditions of persons under study, functional readiness of their organisms for execution of physical loading, run loads' volume and intensity, the mode of energy supply of the run work, method of training, periodicity of lessons, and effectiveness of their influence upon physical health. The characteristic feature of the programs proposed for extracurricular lessons is that the volume of physical load was individually established for each person under study considering functional readiness of his organism to their execution. However we excluded any possibility of the overdose of the physical work. We found out that the purposeful influence on aerobic and anaerobic processes of energy supply depend on the content of lessons determined by means of training, and intensity and volume value of the work executed. The programs developed were taken as a formation principle of universal health improving technologies.

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The electronic version of this article is the complete one and can be found online at: http://www.sportpedagogy.org.ua/html/arhive-e.html

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PHYSICAL EXAMINATION PERFORMED BY THE INTERNATIONAL MILITARY OPERATIONS IN MOUNTAINOUS TERRAIN

Fedak S.S.
Army Academy named after hetman Petro Sahaydachyi

Annotation. *Purpose*: test the author's program of physical training in order to adapt the Armed Forces of Ukraine to the military profession in international operations in various climatic conditions. *Material*: the study involved 67 military first age group - employees under contract. Analyzed growth performance, body weight, lung capacity, sample Stange, carpal dynamometry, heart rate at rest, systolic and diastolic blood pressure recovery time heart rate to baseline after 20 sit-ups in 30 seconds, adaptive capacity, Quetelet index, Robinson, step test, physical condition, life and power indices. *Results*: the effect of physical training lessons the author's program on the physical condition of the peacekeepers, international activities which took place in the highlands. As a result, training peacekeepers marked stable operation of the cardiovascular system and respiratory system. This increases the stability of the organism to adverse environmental factors. *Conclusions*: the positive influence of employment on the program developed by the military on the body.
Keywords: soldier, environment, index operation, peacemaker, physical, preparation.

Introduction

Participation of military officers of Armed Forces of Ukraine in international missions requires high level of combat readiness from manpower. This is connected with the fact that in modern conditions effective application of combat machinery and weapon, no matter how modern they can be, depends on men, who control them, on their professional, psychological and physical readiness [2, 4, 11].

Researches [1, 3, 5, 9] showed that military-professional functioning of peace-makers of Armed Forces of Ukraine, who come to new locations for the first time, is accompanied by influencing of many negative environmental factors. Among them there are: high temperature of the air, reduced humidity, sun radiation in deserts; reduced atmospheric pressure, variation of day and night temperatures and specificities of relief in mountains; restricted space, low motion activity in such places as check points, inhabited localities, combat machinery [1, 6, 8, 10].

Organisms of most of peace makers, who come in new conditions of functioning, “pay high price” for adaptation [5-7, 12-16]. In our researches we determined that indicators of physical condition and somatic state of peace makers worsened in the process of international missions. The most expressed changes in indicators of cardio-vascular and respiratory systems were registered in peace makers, who functioned in mountains.

Thus, our researches showed that existing system of military officers’ physical training, especially those, who are involved in international operations, is not sufficiently effective for maintaining of proper morphological-functional state, somatic health and ensuring of international activity. Main reason of low effectiveness of mentioned indicators of peace makers is neglecting of peculiarities and climate-geographical conditions of future places of functioning by existing physical training program.

On the base of analysis of many scientists’ works (S. Romanchuk, Yu. Finogenov, V. Chaplygin et al.) and basing on our own researches, we worked out program of military officers’ adaptation to military-professional functioning in international missions with the help of physical training means, which imply timely formation of physical and mental fitness and functional abilities of peace makers organism’s systems, ensuring success and effectiveness of their military-professional functioning.

The work has been fulfilled as per plan of SRW of Physical training department of Administrative Center of training and everyday functioning of Armed Forces of Ukraine “Model of physical training in Armed Forces of Ukraine (2007) and its prospects”. Code – Prospect FP”.

Purpose, tasks of the work, material and methods

The purpose of the work is experimental testing of author’s program of adaptation of military officers of Armed Forces of Ukraine to military-professional functioning in international operations in different climate-geographical conditions with the help of physical training means.

For researching of author’s physical training program’s influence on peace makers’ physical condition we analyzed indicators of body length, body mass, vital capacity of lungs (VCL), Shtange’s test, hand dynamometry, Ketle’s index (IK), vital index (VI), heart beats rate in rest (HBR), systolic BP (SBP), diastolic BP (DBP), index of Robinson (IR), index of ste-test (IST), index of physical condition (IPC), time of HBR restoration up to initial level after 20 squatting during 30 seconds and adaptation potential (AP). For carrying out of experiment, contract military officers (of 24-28 years old age) were divided into two groups: experimental (EG) (n=34) and control (CG) (n=33). Testing of EG and CG peace makers’ physical condition was based on medical examinations before mission (initial data) and after operations (final data).

Results of the research

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Analysis of body length indicators of EG and CG military officers showed that mean values of both groups have no confident difference during all period of experiment (P>0.05) (see table 1). Analysis of body length's dynamic also showed that during all period of experiment indicators remained unchanged – no confident difference between initial and final data was registered (P>0.05) (see table 1).

Indicators of body mass of EG and CG peace makers had no confident difference at beginning of experiment (t=0.08; P>0.05) (see table 1). At the end of experiment we registered mass body of both groups' peace makers, but if in EG difference between initial and final data was 1.05kg (t=0.89, P>0.05), than in CG – 1.98 kg (t=1.58; P>0.05). After returning from mission difference in mass bodies of EG and CG peace makers was 0.83 kg, however it was unconfident (t=0.74, P>0.05) (see table 1).

Analysis indicators of mass body permits to come to conclusion that trainings according to developed experimental program ensures stabilization of body mass of EG peace makers during fulfillment of operations in mountains that witness about effectiveness of author's program in comparison with existing physical training of military officers, who were involved in international operations.

Table 1.

Level and dynamics of physical condition of peace makers, who fulfilled operations in mountains (EG and CG) during experiment

Stage of experiment	EG (n=34)			CG (n=33)			Confidence of difference	
	$\bar{X}$	σ	±m	$\bar{X}$	σ	±m	t	P
Body length (cm)								
Beginning	176.03	4.71	0.82	176.25	4.85	0.87	0.18	>0.05
End	176.13	4.69	0.82	176.33	4.82	0.88	0.16	>0.05
Body mass (kg)								
Beginning	72.93	4.98	0.87	73.03	5.38	0.97	0.08	>0.05
End	71.88	4.62	0.80	71.05	4.40	0.79	0.74	>0.05
Ketle's index (g.p.cm))								
Beginning	414.50	29.14	5.07	414.33	27.94	5.02	0.02	>0.05
End	408.39	27.22	4.74	402.92	22.25	4.01	0.87	>0.05
VCL (ml)								
Beginning	4276.47	472.20	82.20	4215.63	618.52	111.09	0.44	>0.05
End	4241.18	326.40	56.82	4081.25	285.28	51.28	2.08	<0.05
Vital index (m.p.kg)								
Beginning	58.88	7.50	1.30	57.83	8.59	1.54	0.51	>0.05
End	59.18	5.33	0.93	57.62	4.95	0.89	1.21	>0.05
Dynamometry of stronger hand (kg.p,sec)								
Beginning	47.85	5.50	0.96	47.41	4.51	0.81	0.35	>0.05
End	46.97	4.69	0.82	45.86	4.94	0.89	0.93	>0.05
Power index (%)								
Beginning	65.82	8.14	1.42	65.27	7.87	1.41	0.27	>0.05
End	65.55	7.40	1.29	64.70	7.41	1.33	0.46	>0.05

Notes. Statistically significant differences of mean values at the beginning and at the end of experiment: «*» - P<0.05; «**» - P<0.01; «***» - P<0.001.

Analysis of weight-height Ketle's index of EG and CG military officers showed that before pedagogic experiment there was no confident difference between mean values (t=0.02; P>0.05) (see table 1). After returning from mission difference was 5.47 g.p.cm, but was unconfident (t=0.87; P>0.05) (see table 1).

Dynamic of Ketle's index of EG and CG has character similar to dynamic of body mass – reducting of indicator in both groups; in EG final Ketle's index was (408.39 g.p.cm) lower that initial (414.50 g.p.cm) by 6.11 g,p.cm (t=0.88; P>0.05), while in CG – by 11.41 g.p.cm (t=1.78; P>0.05). Indicators of EG and CG Ketle's index corresponded to middle level "sufficient mass" both at the beginning and at the end of experiment.

Analysis of VCL at EG and CG showed that indicators, registered before mission had no confident difference (t=0.44; P>0.05). After mission mean VCL value of EG was confidently higher than of CG by 159.93 ml (t=2.08; P<0.05) (see table 1).

Analysis of VCL dynamic showed that its value at EG remained confidently stable during all experiment – difference between initial and final values was 35.29 ml (t=0.35; P>0.05). In CG indicators of VCL worsened by 134.38 ml (t=1.10; P>0.05) (see table 1).

Analysis of vital index of EG and CG permits to note that before and after experiment its value in both groups had no confident difference (P>0.05). Before mission difference between EG and CG indicators was 1.05 ml.p.kg (t=0.51; P>0.05), and after returning – 1.56 ml.p.kg (t=1.21; P>0.05) (table 1).

Indicators of vital index indicators of CG are of negative character and in EG – positive one. In CG VI indicator worsened by 0.62 ml.p.kg (t=0.12; P>0.05), while in EG it improved by 0.3 ml.p.kg (t=0.19; P>0.05) that witnesses about stable level of functional abilities of respiratory system of EG peace makers in process of mission's fulfillment in mountains and about positive influence of training by author's program. Level of reserves of external breathing functions is estimated as "middle" by values of vital index of EG and CG.

Dynamometry of stronger hand of EG and CG military officers showed that their values did not significantly differ before experiment (t=0.35; P>0.05) (see table 1). The end of experiment there was registered difference – EG peace makers' indicators of stronger hand was higher than at CG by 1.11 kg.p.sec., however, the difference is unconfident (t=0.93; P>0.05). Indicators of stronger hand muscles in both groups worsen during experiment and at the end they are lower than at the beginning: in EG by 0.88 kg.sec (t=0.70; P>0.05), in CG – by 1.55 kg.sec. (t=1.29; P>0.05) (see table 1).

Analysis of power index showed that these indicators at EG and CG both at the beginning and at the end of experiment did not confidently differ (P>0.05) (see table 1). During all period of international mission mean value of power index of EG military officers confidently did not change (t=0.14; P>0.05), while at CG it worsened by 0.57% (t=0.29; P>0.05).

With it, value of EG members' power index in the course of experiment was on middle level, while level of functions' reserve of CG members' muscular system was estimated at the beginning of experiment as "middle" and at the end – as "lower than middle".

Physical condition dynamic of peace makers, who fulfilled mission in mountains, showed that the tested indicators more expressively worsened in CG that witness about effectiveness of author's program.

Analysis of HBR in rest at EG and CG permits to note that initial data had no confident difference (t=0.62; P>0.05). At the end of the research difference between HBR indicators of EG and CG was 0.90 b.p.m., but it was unconfident (t=1.58; P>0.05) (see table 2).

Dynamic of HBR in the tested groups of peace makers was characterized by increasing of mean values of HBR in rest during experiment. For example, if in EG indicators, after returning from mission, worsened in comparison with initial data by 0.47 b.p.m. (t=0.74; P>0.05), than in CG – by 1.84 b.p.m. (t=2.60; P<0.05) (see table 2).

Analysis of BP indicators at EG and CG showed that at the beginning and at the end of experiment there was no confident difference between these indicators (P>0.05) (see table 2).

Analysis of BP indicators in both tested groups showed that mean values of SBP and DBP in EG and CG had trend for increasing. For example, at the end of experiment SBP indicators in EG were worse in comparison with initial data by 0,09 mm.merc.col. (t=0.08; P>0.05), while DBP indicators – by 0.88 mm.merc.col. (t=1.09; P>0.05). In CG difference between initial and final values of SBP and DBP was 1.72 mm.merc.col. (t=1.39; P>0.05) and 1.71 mm.merc.col. (t=1.54; P>0.05) accordingly (see table. 2).

Comparative analysis of Robinson's index, which characterizes reserves of cardio-vascular system's functional abilities at EG and CG showed that at the beginning of experiment there was no confident difference between indicators (t=0.28; P>0.05) (see table 2). At the end of experiment Robinson's index at EG was confidently better than the same at CG by 4.08 conv.un. (t=2.03; P<0.05) (see fig.1).

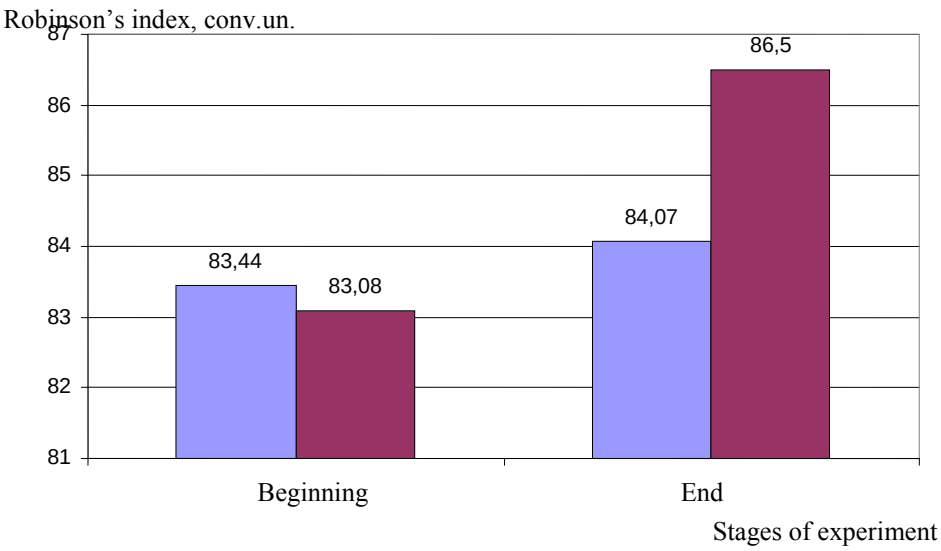

Fig.1. Dynamic of Robinson's index indicators of peace makers, who fulfilled mission in mountains (EG and CG) in the course of experiment (conv.un.)

– indicators of EG peace makers

– indicators of CG peace makers

Table 2.

Dynamic of functional state of peace makers, who fulfilled mission in mountains (EG and CG) in the course of experiment

Stage of experiment	EG (n=34)			CG (n=33)			Confidence of difference	
	X	σ	±m	X	σ	±m	t	P
HBR in rest (b.p.m.)								
Beginning	71.35	3.19	0.56	70.88	2.91	0.52	0.62	>0.05
End	71.82	1.74	0.30	72.72*	2.65	0.48	1.58	>0.05
Systolic BP (mm.merc.col.)								
Beginning	116.94	4.93	0.86	117.19	4.39	0.79	0.21	>0.05
End	117.03	4.10	0.71	118.91	5.31	0.95	1.57	>0.05
Diastolic BP (mm.merc.col.)								
Beginning	72.15	3.34	0.58	72.34	2.94	0.53	0.25	>0.05
End	73.03	3.20	0.56	74.05	5.46	0.98	1.47	>0.05
Robinson's index (conv.un.)								
Beginning	83.44	5.16	0.90	83.08	5.01	0.90	0.28	>0.05
End	84.07	3.90	0.68	86.50*	5.46	0.98	2.03	<0.05
Time of HBR restoration up to initial level (sec.)								
Beginning	87.85	14.23	2.48	88.03	9.81	1.76	0.06	>0.05
End	89.59	13.46	2.34	95.38**	8.57	1.54	2.06	<0.05
Index of step-test (conv.un.)								
Beginning	88.29	7.92	1.42	87.97	7.51	1.35	0.17	>0.05
End	87.50	7.15	1.29	83.94*	5.51	0.99	2.20	<0.05
Shtange's test (sec.)								
Beginning	54.41	8.80	1.58	53.94	8.28	1.49	0.22	>0.05
End	53.09	7.41	1.33	49.38*	5.97	1.07	2.17	<0.05

Index of physical condition (conv.un.)								
Beginning	0.708	0.034	0.006	0.711	0.036	0.007	0.29	>0.05
End	0.699	0.027	0.005	0.680**	0.032	0.006	2.46	<0.05
Adaptation potential (conv.un.)								
Beginning	2.17	0.10	0.02	2.16	0.09	0.02	0.05	>0.05
End	2.17	0.10	0.02	2.20	0.10	0.02	1.39	>0.05

Notes. Statistically significant differences of mean values at the beginning and at the end of experiment: «*» - P<0.05; «**» - P<0.01; «***» - P<0.001.

Analysis of Robinson's index dynamic of EG peace makers showed that training by author's program ensure stable work of cardio-vascular system of peace makers during all experiment; value of indicator unconfidently increased by 0.63 conv.un. (t=0,56; P>0.05). Increasing of this indicator means worsening of cardio-vascular system's functional abilities. Robinson's index of CG peace makers at the end of experiment confidently worsened in comparison with initial data by 3.42 conv.un. (t=2.57; P<0.05) (table 2, fig. 1). With it IR indicators in CG at the end of research correspond to middle level, while in EG they were "higher than middle".

Analysis of time of HBR restoration up to initial level after 20 squatting during 30 seconds of EG and CG peace makers witness that at the beginning of experiment indicators did not confidently differ (t=0.06; P>0.05). At the end of the research difference between EG and CG indicators was 5.79 sec. and became confident (t=2.06; P<0.05) (see table 2).

Analysis of dynamic of time of HBR restoration up to initial level permits to note worsening of this indicator in both groups during all experiment. But, if in EG difference between initial and final data was 1.74 sec. (t=0.51; P>0.05), than in CG it was 7.35 sec. (t=3.14; P<0.01) (see table 2).

Analysis of step-test index of EG and CG step-test index witnesses that before mission indicators of both groups did not differ (t=0.17; P>0.05). After mission step-test index of EG military officers became confidently higher than the same of CG group by 3.56 conv.un. (t=2.20; P<0.05) (see table 2).

Dynamic of step-test index in both groups of peace makers, who fulfilled mission in mountains, has trend to reduction. But if in EG this index remained practically unchanged (t=0.41; P>0.05), then in CG it confidently worsened by 4.03 conv.un. (t=2.41; P<0.05).

Analysis of time indicators of breathing pause after inhale showed that at the beginning of experiment Shtange's test of both groups' military officers were confidently equal (t=0.22; P>0.05). At the end of research time of breathing pause of EG members confidently exceeded the same indicator of CG by 3.71 sec, (t=2.17; P<0.05) (see table 2). Dynamic of Shtange's test's indicators in both groups had similar to previous indicators character: insufficient reducing of indicator in EG by 1.32 sec. (t=0.22; P>0.05) and confident worsening in G by 4.56 sec. (t=2.49; P<0.05) (see table 2).

The level of functional abilities of cardio-respiratory system of CG peace makers before mission was estimated as "good" and after returning – as "satisfactory". In EG during all experiment we registered good level of functional abilities by Shtange's test.

Analysis of physical condition index showed that its mean value in both groups of peace makers in both groups before mission did not confidently differ (t=0.29; P>0.05). At the end of experiment difference was 0.019 conv.un. and was confident (t=2.46; P<0.05) (see table 2).

Dynamic of physical condition's index had negative character during all experiment: indicators of EG at the end of the research were lower than initial data by 0.009 conv.un. (t=1.15; P>0.05). In CG mean value of physical condition's index confidently worsened by 0.031 conv.un. (t=3.36; P<0.01).

Analysis of indicators of adaptation potential of EG and CG members showed that at the beginning as well as at the end of experiment there was not registered any confident difference (t=0.05; t=1.39; P>0.05) (see table 2). AP values of EG peace makers did not change during the whole experiment, while in CG they worsened by 0.04 conv.un. (t=1.41; P>0.05) (see table 2).

Conclusions:

Analysis of effectiveness of author's program on improvement of peace makers' functional state permitted to determine positive influence of trainings by the worked out program on organism of experimental group's military officers (n=34). As a result of trainings of peace makers, who fulfilled international missions in mountains, we registered stable operation of cardio-vascular system and respiratory system that, in the whole, facilitates increasing of their organism's resistance to influence of unfavorable environmental factors.

Further researches imply foundation and development of programs of military officers' adaptation to military-professional functioning in international missions with the help of physical training of military officers of older age groups of different categories.

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INVESTIGATING THE RELATION BETWEEN ORGANIZATIONAL CLIMATE AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR IN THE PHYSICAL EDUCATION OFFICES EMPLOYEES IN MAZANDARAN PROVINCE

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Annotation. *Purpose*: The aim of present study was to investigate the relation between organizational atmosphere and organizational citizenship behavior of Mazandaran province physical education offices staff. *Material*: This is a correlation and descriptive study, and also a field study. Statistical population of the study was the whole staff of Mazandaran province offices of physical education in 1390 (N=188), that 127 of them were selected randomly and with allocating coordination method. Tools for collecting data were three questionnaires, (1) individual characteristics questionnaire, (2) organizational citizenship behavior questionnaire of Bell and Mangog, and (3) organizational climate questionnaire of Sussman & Deep. To analyze data we used descriptive and inferential statistics (Pearson correlation coefficient and multi-variable regression). *Results*: Study results showed a significant positive relation between organizational climate and its factors with staff organizational citizenship behavior ($p \leq 0/01$). Also step-by-step multi-variable regression analyze showed that goal and communication factors are good predictors of organizational citizenship behavior of physical education headquarters staff, respectively ($p \leq 0/01$). *Conclusions*: According to results we recommend that sport organizations managers through creating positive organizational atmosphere, goal clarity and more staff interactions, can increase the outbreak of organizational citizenship behavior in staff, and finally improve organizational efficiency and effectiveness.
Keywords: organizational, citizenship, behavior, climate, offices, physical education.

Introduction

Today world is in progress increasingly and this factor shows the necessity of creativity, flexibility, efficiency, and responsibility for organizations if they want to survive. Because of this, new standards must be codified for organizations to be responsible of challenges and provide proper situation for staff to have the most appropriate skills. According to this, psychologists have emphasized the fact that organization staff must act beyond their formal duties. In respect of high interactions with customers and also the nature of services, this conception is more important in service sections (7). One of helpful skills in this way is organizational citizenship behavior.

This subject refers to personal behaviors that route from individual intuition, and in addition of increasing the efficiency and effectiveness of organizational performance, it doesn't encourage directly and through formal testimonial system (9). This behavior is known as staff supportive behavior from social and psychological facets of organization (4). In fact such behaviors are so important and useful for organization that leads to results such as very much effective communications and such a relation leads to cooperation between work groups and also is a basis of desired job distribution between staff (9). Organizational citizenship behavior can't be motivated by awards or formal motivations (11). So encouraging staff to show organizational citizenship behaviors and understanding variables that have effect on it, have been an important survey subject scientifically and practically. Generally former studies about organizational citizenship behavior show that personality characteristics, staff attitude, justice conception, leader behavior, and organizational traits (e.g. organizational climate and organizational commitment) act like predictor variables of this factor (10). The way person acts in an organization is dependent on type of his personality, organizational role he has, and his organizational position and situation, also in today's competitive organizations only organizations can survive which give importance to their staff. Then staff conceptions from their organization which is named as organizational atmosphere, is so important (6).

At the other side organizational climate is known as a critical and basic element in determining organizational efficiency and a set of mental situations that have strong effect on organizational circumstances like systems, structures, and management behavior (13). Organizational climateis a broad structure of multiple aspects that absorb many respected elements as organizational citizenship behavior. It has been referred that organizational climate has influence on individual behaviors, because they try to be consistent to psychological environment to reach vital balance and self-resistance. In general organizational climate that facilitate the reaction norms may increase organizational citizenship behavior events.

Suresh et.al (2010) showed in a study that organizational citizenship behavior is under the influence of personality factors such as organizational climate and individual characteristics (age, sex, and marriage). Organizational climate particularly can be a predictor for organizational citizenship behavior. In another study Duff (2007) indicated that organizational climate has influence on citizenship behavior, and is an important predictor of it. Akhtar Jamali et.al (2009) showed that variables of job satisfaction and organizational commitment have positive effect on citizenship behavior, and organizational climate and job exhaustion have negative effect. And among five variables of

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organizational climate manager supportive behavior is the only factor that can predict organizational citizenship behavior positively. Sabzipoor et.al (2011) showed that there is no significant relation between organizational climate and citizenship behavior. Also Biswas&Varma,(2007)in a study among 357 staff of duty and industrial portions found that individual conceptions about accurate and creative environment of organization is so important and has positive influence on staff satisfaction. In respect of the fact that physical education organizations and provinces physical education headquarters are the main country trustees in a range from sport for all and educational sport to professional sport and championship, and its performance is a basis to achieve physical education and sport goals, and also with this in mind that in recent years organizations have became more complicated and common characteristics of organizations, and also the fact that organizational climate includes person conception from organization and in many studies its effect on citizenship behavior has been reported, thus doing more surveys about internal environment related factors and individual conceptions of that environment and also its effect on staff organizational citizenship behavior and finally organization performance, can be a good response to future problems. Therefore according to the need to investigate organizational climate role in increasing staff organizational citizenship behaviors and organization efficiency, present study aimed at investigating the rate of organizational citizenship behavior outbreak according to organizational climate in Mazandaran province sport and youth offices.

Methodology:

Present study is correlation descriptive and also a field study. Statistical population included whole staff of Mazandaran province sport and youth offices (N=188). Samples determined 127 according to volume of population and *Krejcie& Morgan*table , randomly and specifically. Tools for collecting data were individual characteristics questionnaire (age, sex, and study field, sport and job antecedents), to evaluate "organizational citizenship behavior" we used standard questionnaire of Bell and Mangog (2002) that has 20 questions in Likert 7-scales that evaluates the organizational citizenship behavior in five aspects including humanism, veneration and humility, magnanimity, job conscience, and civil behavior. To evaluate organizational atmosphere we used standard questionnaire of Sussman& Deep (1989) includes 20 five-scaleLikert types that evaluates organizational climate in five aspects including goal, role, award, procedures, and communications. Reliability of questionnaires through Cronbach's Alpha was 75% and 85%, respectively. To analyze data we used Pearson correlation coefficient and multi-variable analyze in significance level of $\alpha \leq 0/05$.

Results:

1. the most important personal characteristics of staff are shown in table 1.

Table 1.

Descriptive staff personal characteristics

variables	levels	Percent
Sex	Male	72/5
	Female	27/5
Study field	Physical education	40/6
	Non-physical education	58/3
Age	Minimum=18-24years old	2/5
	Maximum=25-34years old	34/2
Job antecedent	Minimum=11-15years	16/7
	Maximum=upper 20years	24/2
Sport antecedent	Don't have	30/8
	Have	69/1

As shown in table 1, 72/5 percent of samples were men and 27/5% of them were women. The maximum frequency was related to non-physical education staff (58/3%) in respect of study field. Most of samples were at the age range of 25-34 years old (34/2%) and the minimum frequency was related to the age range of 18-24 years old (2/5%). Maximum frequency of job antecedent was for staff with 20 years and more (24/2%) and minimum frequency was for staff with 11-15 years of job antecedent (16/7%). Most of samples (69/1%) have sport antecedent but 30/8% of them have ni sport antecedent.

2. Descriptive data about variables of organizational citizenship behavior and organizational atmosphere are shown in table 2.

Table 2.

Mean and standard deviation of organizational citizenship behavior and organizational climate with their dimensions

Variable / statistical indexes	mean	Standard deviation
Courtesy	6/04	0/62
Conscientiousness	5/33	0/94
Altruism	5/58	0/85
civil virtue	5/51	0/82
Sportmanship	2/58	1/13
Organizational citizenship behavior	5/09	0/48
Role	3/85	0/61
Communications	3/82	0/44
Goal	3/44	0/65
Award	3/39	0/62
Procedures	3/17	0/68
Organizational climate	3/53	0/43

As we can see in table 2 veneration and attention aspect of organizational citizenship behavior variable is maximum with mean value of 6/04 and magnanimity aspect is minimum with 2/58. Also the role aspect of organizational climate variable is the most with mean value of 3/58 and procedures aspect is the least with 3/17.

Table 3.

Results of Pearson correlation coefficient between organizational climate and its factors with citizenship behavior

Variables names	organizational citizenship behavior	
	Pearson correlation coefficient	Significance level
Organizational climate	0/505	0/001
Goal	0/484	0/001
Role	0/430	0/001
Award	0/198	0/030
Procedures	0/310	0/001
Communications	0/393	0/001

Correlation is significant in level of p<0/05.

As shown in table 3 there was positive significant relation between organizational climate and organizational citizenship behavior of Mazandaran province headquarter of physical education staff (p<0/001, r= 0/505). Also there were significant positive relations between factors of goal (p<0/001, r= 0/484), role (p<0/001, r= 430), award (p<0/030, r=0/198), procedures (p<0/001, r=0/310), and communications (p<0/001, r=0/393) with organizational citizenship behavior.

Table 4.

Results of step-by-step multi-variable regression for predicting citizenship behavior through organizational climate factors

Statistical indexes / Predictor variable	model	Sum of squares	Degree of freedom	Mean of squares	F	P
Goal	Regression	6/58	1	6/58	36/13	0/001
	Residual	21/50	118	0/18		
	Total	28/08	119			
	R=0/48, R Square=0/234					
Goal and Communications	Regression	8/23	2	4/11	24/36	0/001
	Residual	19/85	117	0/17		
	Total	28/08	119			
	R= 0/54, R Square=0/293					

Table 4.

Resulted coefficients of multiple regression

Predictor variable	Non-standard coefficient		Standard coefficient	t	P
	B	Standard error	Beta		
Goal	0/001	4/79	0/39	0/06	0/19
communications	0/002	3/11	0/25	0/08	0/27

According to table 4, results of variance analyze and regression statistical indexes showed that among organizational climate factors, goal is a good predictor for citizenship behavior of physical education headquarter staff ($p<0/001$, df=1, F=36/13). Also goal factor with communications can predict citizenship behavior of staff (P=0/001, df=2, F=24/26).

Discussion

As noticed earlier organizational atmosphere is defined as a total concept of an organization and personal effect of job environment that has influence on person job behaviors, and is an effective element in organization that may increase organizational citizenship behavior of organization. In this study findings showed that organizational climate and its factors have significant and positive effect on organizational citizenship behavior, which is with a positive organizational climate staff outbreak citizenship behaviors. These results are consistent with Suresh et.al (2010), Duff (2007), and Biswas&Varma (2007). According to their findings desired and healthy organizational climate can influence professional relations of staff positively, and make a friendly and close relation between them in respect of cooperation. Also desired and healthy organizational climate probably make a situation in which leadership and management can be successful and staff are more pleased, satisfied, motivated, and responsible. Organizational climate has the maximum effect on staff organizational citizenship behaviors, that is, much opener organizational climate makes more organizational citizenship behavior level; Duff (2007) also indicated this. According to results we can say staffs of Mazandaran province offices of physical education have a mediocre level of organizational climate, because staff make more communications with each other and customers and face little behavioral problems, and also goals and roles are completely well determined.

Organizational climate is defined as an important and fundamental element in determining organization effectiveness and a set of psychological conditions that influence job behaviors of individuals and contacts related to job, and it is the basis for staff conceptions about quality and characteristics of an organization, and finally leads to more beneficiaries (Gupta 2008). This result is inconsistent with Sabzipoor et.al (2011), and Akhtar Jamali et.al (2009), they found that improvement in organizational climate factors like independence, support, justice, etc can increase satisfaction, and satisfaction leads to organizational commitment of staff that indirectly we can see the effective role of organizational climate factors on organizational commitment. This inconsistency maybe is because of the difference between organizational climate, tools of data collecting, and statistical populations. Biswas& Varma found that individual conception of right and creative condition in organization is important and has positive influence on staff satisfaction and can involve them with organizational citizenship behaviors; conception of condition and organizational climate motivate staff to outbreak more organizational citizenship behaviors, and increase in such behaviors leads to more responses to customers from staff in respect of veneration and reverence, they help their colleagues more and make organization more efficient.

Findings show multiple relations between various aspects of organizational climate and citizenship behavior of physical education organization staff. Among five sub-scale of organizational climate, communications and then goal clearance and agreement can predict citizenship behavior for physical education staff more than other aspects. When any of these aspects goes up for staff, they are motivated by their job environment, that is, environment is a pleasant and useful place for them. In fact staff expects a supportive and desired place at first they coming to an organization to secure their needs through it. Therefore it is recommended that managers organize affaires which make staff work honestly and participate in activities. More positive organizational climate leads to easier human relations that increase organizational citizenship behavior and also organization efficiency and effectiveness. According to results of present study we can improve citizenship behavior among organization experts through creating aspects of organizational climate. For example, we can increase staff citizenship behavior levels with clarifying goals and roles in organization and make agreement about them, proper and staff related efforts, awards and activities, creating satisfaction and agreement about procedures and way of doing duties, and also effectiveness of communications among staff, and can also make organization more efficient and achieve desired results for physical education organization.

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