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CONTENTS

MODERN TECHNOLOGY OF PHYSICAL EDUCATION OF DISABLED STUDENTS IN CONDITIONS OF INCLUSIVE EDUCATION

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Abstract. There is a problem of physical education of disabled students during period of their study in higher educational establishments. Insufficiency of this problem's studying conditioned fulfillment of research of perfection of physical education and sports system. *Purpose:* substantiation of physical education pedagogic technology for disabled students. *Material:* in experiment students with following nosologies participated: hearing, eyesight, muscular-skeletal apparatus, after effects of cerebral palsy, somatic diseases and diabetes. In total 664 students of 18-24 years' age took part in experiment. They were 337 boys and 307 girls. *Results:* we have worked out organizational-methodic algorithm, which permits to combine theoretical, scientific-methodic and practical training. Its basis is current information about students' psychic-physiological condition. We determined levels of health and physical condition, physical workability and physical fitness as well as psychic state of students. Demand in optimization of students' motor functioning during all period of study was substantiated as well as effective means of physical education and pulse regimes, considering peculiarities of nosologies. Students' orientation on sport style of life was formed. *Conclusions:* implementation of physical education pedagogic technology for students with different nosologies in the process of their studying stipulates solution of training, health-related and educational tasks. It is possible through creation of conditions for motor actions' training and intensification of motor functioning during all period of study. Practical application of the technology and received results points at integration of disabled students in students' medium.

Key words: technology, students, physical, nosologies, functioning, studying, inclusion.

Introduction

Equal rights of disabled people imply that every individual has equal opportunities for participation in life of society. It is mentioned in Standard regulations of ensuring equal rights for disabled. Disabled people shall be supported in acquiring education, in employment. Quality education is one of conditions of their integration in society. Research of modern labor market showed that among disabled, graduated from HEEs have by 80% more opportunities to find work than people without higher education [2, 8, 13, 21]. As usual integration is understood as learning of disabled together with healthy people. Common opinion is that in process of integration disabled person accept existing standards; observe them and becomes equal to other. Nut for this purpose he (she) shall spend much efforts and time for adaptation to strange environment [8, 16].

There is another form – inclusion. It admits change of existing standards and style of healthy people. In this case the main idea is that every person has right to be individual. He (she) shall study in usual educational medium, by usual curriculum, on equal with other students. For this purpose he (she) is included in common educational process; in ordinary regime, and provided with all required equipment and provisioning [10, 13]. Inclusion means change of society and its institutes so that they should facilitate inclusion of different people (other race, other religion, culture, disabled people, people with different social status and etc.). It facilitates interests of all members of society, increase of their ability for independent life, ensuring their equal rights and so on. One of the most important components of social and psychic adaptation study of disabled students in higher educational establishment is physical health and physical fitness. That is why attitude of young people with different nosologies to physical education and sports functioning is one of the most important social-pedagogic problems of the present time. Physical education is the only discipline, in which respect of man to own body, training of motor abilities, acquiring of necessary knowledge, understanding of demand in systemic physical exercises' trainings are focused. Such approach is the basis for strengthening of self-confidence, self-assessment; formation of positive motivation for healthy life style [6, 9, 11, 14, 17-20].

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Purpose, tasks of the work, material and methods

The purpose of the research is substantiation of physical education pedagogic technology for disabled students in conditions of inclusive education, as well as formation, on this basis, directions of further physical education and sports functioning perfection (structure and content) of youth with different nosologies in compliance with their defects and diseases, demands and interests, conditions of future functioning.

In he research 644 students of 2nd and 3rd disability groups participated. They were 337 boys and 307 girls. All they were students of University "Ukraine".

Results of the researches

We registered 43 indicators, which characterized physical condition, physical health, physical workability, physical fitness and psychic status of students.

Motor functioning of students with different nosologies (eyesight, hearing, and muscular-skeletal apparatus, after effects of cerebral palsy, somatic diseases and diabetes) was assessed with the help of indicators and tests. These tests show motor potentials in dynamic of pedagogic process, corrected by us in experimental group. In the basis of methodic of motor actions' and increase of students' motor activity we put didactic rules. The system of complexes of exercises was divided in three stages of complexity: the easiest; moderate difficulty and the most difficult. Every stage had general algorithm of action: individual approach to health related physical exercises' practicing. Such approach expressed in differentiation if trainings, means and norms of physical loads. Min criterion of assessment was increment of indicators for every student with certain nosology. Criteria also included every day fulfillment of physical exercises, gradual increase of volume and intensity of loads, transition from one stage to other. Besides, we considered acquiring of knowledge, abilities and skills, which can be applied in practice. With it decisive importance had systemic repetitions of earlier mastered exercises. Thus, complexity of motor tasks increased with every stage, with planning of optimal quantity of movements' repetitions. In figs. 1, 2 we present the received dynamic of physical health and physical fitness integral indicators of disabled students (boys and girls) before pedagogic experiment.

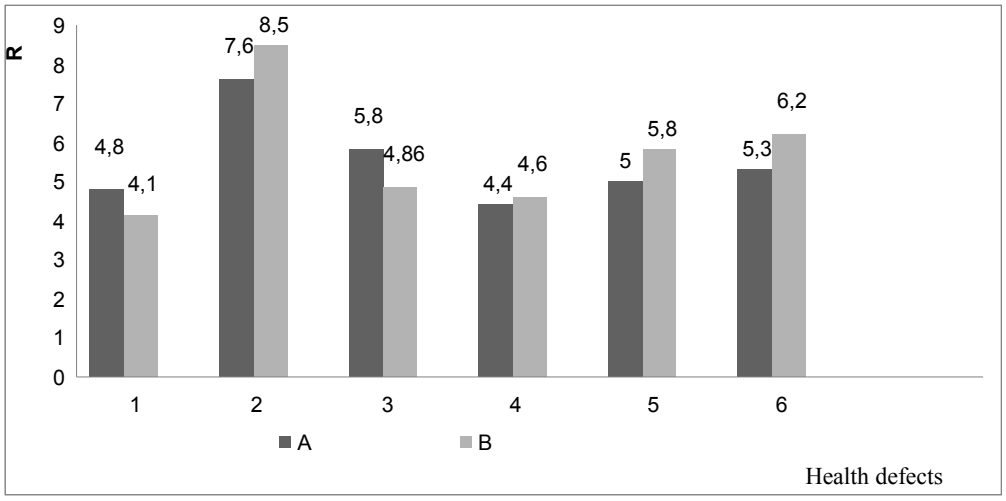

Fig.1. Physical health level of disabled students before pedagogic experiment (L.G. Apanasenko).
Legend: R – physical health level; sum of points 3 and less – low level, 4-6 points – below average, 7-11 points – average level, 12-15 points – above average, 16-18 points- high level; 1 – eyesight; 2 –hearing; 3 – muscular-skeletal apparatus (MSA); 4 – cerebral palsy (CP); 5 – somatic diseases (SD); 6– diabetes (D); A - students; B –girl-students.

The received results show (see fig. 3) that students with eyesight, muscular-skeletal apparatus and cerebral palsy after-effects; somatic diseases and diabetes defects have physical health level below average (4.4 conv.un. – in boys with cerebral palsy after-effects; 5.0 conv.un. – in students with somatic diseases; 5.3 conv.un. in students with

diabetes; students with muscular-skeletal apparatus defects approach to average level – 5.8 conv.un.). Students with hearing defects have average level of physical health (7.6 conv.un.). Indicators of girl-students with different nosologies do not differ significantly. Girl-students with hearing defects and diabetes have average level (8.5 conv.un.) and (6.2 conv.un.) respectively. Girl-students with other defects are at level below average.

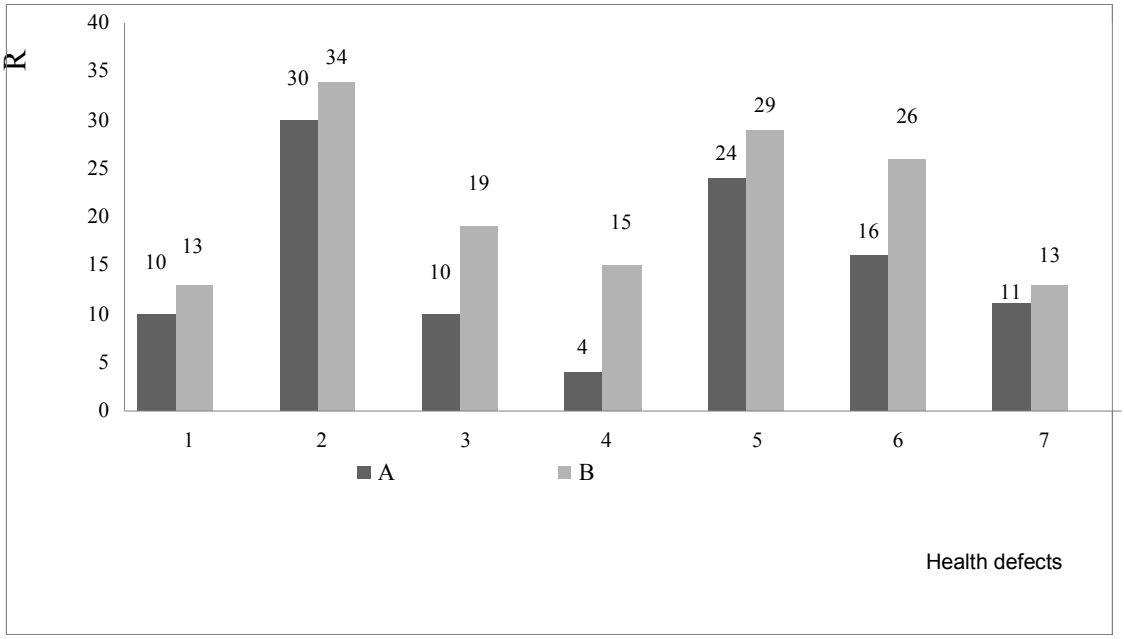

Fig.2. Output level of physical fitness of students with different nosologies (T.Yu. Krutsevych).
Legend: R – physical health level; 45-5 high level; 35-44 – above average level; 24-34 points – average level; 15-24 below average level; 10-14 points – low level. 1 – eyesight; 2 –hearing; 3 – muscular-skeletal apparatus (MSA); 4 – cerebral palsy (CP); 5 – somatic diseases (SD); 6– diabetes (D); 7. – control group (CG); A - students; B –girl-students.

It is known that for unification of tests and their maximal integration in European system, in Ukraine State system, of tests and assessment standards for physical fitness of population was worked out. In this system separate part is devoted to students. The worked out set of tests included exercises, which permit to assess development of all five physical (motor) qualities of an individual: endurance, strength, quickness, coordination (dexterity) and flexibility. Taken together they give adequate picture of student's physical fitness.

Pedagogic testing of disabled students' physical fitness was fulfilled as per State system of tests and assessment standards for healthy students. It is connected with the fact that there is no such system especially for disabled students. Output results of disabled students' physical fitness showed that differences between students with different nosologies in most of indicators were absent ($P>0.05$) (see fig.2).

Significant differences in physical skills' level were found only between students with hearing defects and students with eyesight defects. In first category physical fitness level corresponded to average; in latter category – to low level.

Students with after-effects of cerebral palsy had physical fitness characteristics of below average level. With it 70% of standard tests they could not fulfill. Boys with defects of eyesight, muscular-skeletal apparatus and cerebral palsy after-effects had low level of physical fitness (especially students with cerebral palsy after-effects). Their motor qualities could be assessed only by four tests: for strength, dexterity, flexibility and ability to swim (their points were respectively 10, 10 й 4). Students with hearing problems had average level of motor fitness, which were assessed by all tests". Excellent" marks were received in tests for dexterity and ability to swim. Sum of points was 30. Nearly average level (24 points) was reached by students with somatic diseases. Students with diabetes had 16 points. It corresponds level below average. Disabled girl students had a little better physical fitness, comparing with boys. For example girl-students with hearing defects had 34 points. All tests they fulfilled with mark "good". Girls with somatic

diseases and diabetes also were on average level – 20 and 26 points respectively. Girl students with muscular-skeletal apparatus defects and cerebral palsy after effects had results below average (19 and 15 points respectively). Girl students with cerebral palsy after-effects could not fulfill tests for endurance and strength. The received results of disabled students' physical health and physical fitness during all period of their study witness that by most of tested indicators there are positive shifts from year to year. It is connected with implementation of new scientific methodic content of training and organizational patterns fro disabled students. Results of comparative analysis witness, that programs of trainings with application of different innovative means and forms of physical education influence on the tested indicators. These programs were corrected by us in compliance with students' nosologies. Significant positive shifts took place at different level of percentage in students with eyesight, hearing, muscular-skeletal defects and cerebral palsy after-effects; with somatic diseases and diabetes (see table 1).

Table 1. Comparative characteristic of influence of new physical education technology on physical health and physical fitness of students after pedagogic experiment (% from initial level).

Indicators of physical health and physical fitness	**Students – girl students by different nosologies**					
	Eyesight	**Hearing**	**MSA**	**CP**	**Somatic diseases**	**Diabetes**
Physical health, points	58.31/ 68.18	24.78/ 18.22	85.11/ 60.44	41.34/ 36.34	82.51/ 69.03	67.07/ 57.44
3000 m run, min….sec. 2000 m run, min….sec.	-	5.86/8.33				.
Swimming during 12 min. meters	24.82/ 15.28	20.33/ 16.62	10.28/ 21.40	-	15.67/ 14.32	49.87/ 79.31
Chin ups, times	55.01/-	50.6/-	54.34/-	-	68.05/-	73.68/-
Pressing ups in lying position, times	53.88/ 79.41	24.18/ 62.17	35.76/ 67.82	23.72/ 37.33	26.09/ 37.27	29.51/ 38.65
Rising torso in sitting position from lying one during 1 minute, times	42.80/ 24.34	17.63/ 34.79	42.80/ 41.15	-	36.96/ 57.91	37.18/ 45.70
Long jump from the spot, cm	11.83/ 12.91	9.45/ 4.59	10.78/ 9.16	-	12.25/ 13.63	16.65/ 13.09
Hanging on bent arms, sec.	63.38/ 39.81	52.90/ 3.53	24.75/ 57.54	23.56/ 47.74	20.93/ 24.03	14.29/ 91.51
Shuttle run Човниковий біг 4х9 m, sec.	-	7.61/ 4.66	-	-	11.41/ 11.34	4.86/ 10.15
Forward bending of torso in sitting position, cm	49.07/ 25.73	25.78/ 27.84	100/ 59.04	85.91/ 46.31	31.35/ 18.73	74.83/ 23.18
Swimming, meters	10.63/ 44.73	22.32/ 12.50	6.17/ 5.01	16.82/ 26.06	31.00/ 19.59	56.36/ 25.97

The corrected by us process of physical education of disabled students resulted in significant positive effects in health condition and in mastering of knowledge about physical culture and sports; in different motor actions.

Discussion

When working out technology of physical education for disabled students we considered results of scientific researches of domestic and foreign specialists concerning means and methods of physical education and sports trainings, forms of training and stages of motor activity's formation of disabled person [7, 12, 14-16, 22-25]. We regard out approach to be timely in connection with peculiarities of direction of the research and contingent of the tested.

When working out technology of physical education for disabled students we considered solution of educational, health related and training tasks as well as demand in implementation of health related technologies and innovative programs with compulsory observation of conditional and health related training principles in physical culture practice. It should be added that trainings shall comply with different nosologies of students and cause their interest in physical functioning and demand in it. Various forms and kinds of physical exercises' practicing and sports

functioning ensured the following: prophylaxis of hyperkinesias and physical inactivity at the account of increase of vitally important volume of movements and loads; widening of respiratory and cardio-vascular systems' reserve potentials; rising of organism's general resistance to different diseases. Implementation of individual system of every disabled student's assessment facilitated increase of motivation for practical trainings and receiving higher mark in accessible for them motor test. Distinctions in health levels, physical workability and physical fitness preconditioned differentiated approach implementation in determination of optimal physical loads. With it we considered specificities of nosologies in process of adaptation to systemic physical exercises' trainings and sport functioning. Analysis of own researches' results showed that health related physical culture activity gradually acquires status of objective demand for disabled students. It is connected with the fact that students feel positive shifts in their health, psycho-physical state and physical fitness. These changes to large extent depend on content and form of physical education for students with different nosologies.

Analysis of special literature data (philosophic, sociological, the data from general and special pedagogic, humanistic psychology, culture, valueology, anatomy, normal and pathologic physiology, general psychology, morphology, genetic and other) permits to mark out conceptual principles, which the most important for formation of disabled personality; his (her) spiritual and physical development, socialization and integration in society [2, 7, 11, 12, 17, 18]. The most significant for disabled people and for formation of theory and practice of students' with different nosologies physical education are starting conceptual principles, which are components of Conception of HEEs development "Open international University of human development "Ukraine". Besides, it concerns all structural departments of University "Ukraine", which realize physical education of students with different nosologies. The main directions of physical education and sports functioning of disabled students are the following:

- Increase of physical education quality;
- Formation of motivation and demand in health improvement in disabled students by means of physical education and sports functioning;
- Innovative provisioning of physical education technology;
- Physical culture education – formation of system of knowledge about physical culture and sports;
- Adequate volume of motor functioning in compliance with psycho-physiological demands, defects and diseases;
- Involvement in systemic physical education and sports trainings;
- Health related physical culture and rehabilitation work, oriented on embedding of principles of physical and spiritual health and rehabilitation of lost functions;
- Development of sports movement among disabled students;
- Facilitating Para-Olympic kinds of sports and active participation in international Para-Olympic movement;
- Formation and cultivation of skills and habits of personal hygiene and healthy life style;
- Mastering of control and self-control skills over organism's functional state in process of physical exercises' fulfillment;
- Creation of scientific-methodic center of physical rehabilitation and recreation;

For conduct of physical training-education process of disabled students we stipulated:

- Creation of preconditions for training of motor actions during all period of study at HEE;
- Availability of practical experience;
- Variable content of trainings and methodic of their conduct, considering students' nosologies and current condition of their health;
- Formation of skills and habits of main and applied motor actions;
- Optimal influence of physical exercises on development of motor qualities, considering students' defects and diseases;
- Improvement of psychic disabled students' state and physical fitness;
- Mental readiness for mastering of motor action;
- Organization of health protection medium in HEE.

Technology of disabled students' physical education is a purposeful pedagogic process of physical education and sports functioning, which includes effective means, methods and methodic techniques. They are adapted to

students' nosologies. Such adaptation influences on their health, physical workability, physical fitness and psychic status. All these facilitate development of professional skills and abilities. Our researches prove that increase of disabled students' motor functioning at lessons of physical education is a complex multisided process. In this process laws of general and special character act. This process was realized on the base of definite principles, rules, scientific and methodic principles of physical culture.

Physical education-training process is the basis of students' physical development, physical workability and physical fitness. It determines the character and content of all motor functioning. Formation of disabled students' health in HEE conditions was realized stage by stage:

1 year – training of movements and formation of motor functioning's general level;

2 year – training of movements and organizational-pedagogic approaches to stimulation of motor functioning;

3 year - training of movements and realization of integrative forms of motor functioning intensification;

4 year - training of movements and formation of motor functioning of students with different nosologies.

Application of physical education technology for disabled students results in the following:

- rising of health level and understanding of own organism's potentials;
- formation of firm motivation and demand in systemic independent practicing of physical exercises of different orientation;
- formation of physical culture of disabled youth;
- involvement in healthy life style and preparation for conditions of life activity;
- correspondence to requirements of educational-qualification characteristic of the chosen profession;
- promotion of self-determination, self-realization in health related physical culture and sports functioning and in profession;
- activation of students' scientific-research work.

The offered by us technology of physical education for disabled students has a number of advantages: it completely considers earlier fragmentary works, fulfilled by scientists, devoted to physical training of disabled youth [1, 2, 8, 12, 15]; it is adapted to specific features of disabled students' psycho-physical condition. The technology is adapted to the existing in Ukraine normative base. We have formulated orientation and content of health related physical culture and sports provisioning of disabled students' training.

Conclusions:

1. Results of pedagogic experiment, their implementation in HEEs' educational process permit to say that application of physical education technology for disabled students helps to find the most effective way to health improvement by means of physical culture and sports; to intensification of motor functioning and cultivation of healthy life style. With it, it is necessary to consider that traditional means and methods for healthy students are not always suitable for disabled students. Variability of motor actions, demands, motives, aims of their mastering and usage; presence of great number of individual features of disabled youth make doubtful working out of single theory of motor actions' training.

2. We have experimentally tested directions of students' health improvement and their physical fitness and motor functioning's rising. It is facilitated by:

- application of different means;
- application of differentiated approach to physical loads;
- application of functional potentials and current health condition; students' interests.

Results of pedagogic testing prove integration of disabled students in students' environment. The offered forms of physical education classes' and sports training organization have so great reserves of integration, which do not exist in any educational activity. Common existence brings the following use:

- in healthy students kindness, mercy, care are awakened and cultivated;
- in disabled students – trust, sense of security and thankfulness.

Disabled students feel themselves more comfortably than in a circle of their own kind (they morally equalize). Their attitude to own personality change: to perception of environment, to masking defects, to self-presentation.

Conflict of interests

The author declares that there is no conflict of interests.

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PECULIARITIES OF MILITARY OFFICERS' PHYSICAL PERFECTION DURING TROOPS' BEING IN CONDITIONS OF POSITIONAL DEFENSE

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Abstract. *Purpose:* to determine demand and opportunities of military officers' physical perfection in conditions of positional defense. *Material:* in research personnel of companies' strong points (n = 32), scouts (n = 26), drivers of military automobile transport (n = 23) participated. *Results:* it was found that 64% of mobilized military officers prefer to practice physical perfection in period of fighting capability's restoration. Only 27% had desire to physically train. 16% practice physical training. 13% of personnel practice physical training from time to time. We found insufficient level of military officers' applied skills. It was determined that key factor in formation of military officers' demand in physical perfection was their inner motivation, based on own experience of sports trainings. *Conclusions:* Troops' being in conditions of positional defense for long time is not an obstacle for realization of military officers' demand in physical perfection. Character of military officers' functioning in zone of conflict permits to organize systemic process of physical training by means of fulfillment of power oriented physical exercises and improvement of some applied skills.

Key words: defense, applied skills, power abilities, training, physical fitness.

Introduction

Theory of physical training (PT) in troops completely describes organization of military officers' physical perfection in time of peace. In conditions of special period PT organization remains out of attention of military authorities and requires solution. The mentioned problem causes justified interest of commanders, PT specialists, and scientists [1–7]. In publications from combat zone (CZ) physical training is given as mean of organization of military officers' leisure and maintaining them in proper condition [8–10].

Domestic specialists actively analyze experience of operations in conflict zone (ATO), study PT potential for ensuring personal safety of military officers [11], give offers on maintaining of military officers' proper physical fitness, improvement of their applied skills [12]. It is stressed that it is purposeful to physically perfect military officers with means of gymnastic and athletics, as well as with hand combat means [13]. Alongside with traditional means of physical perfection it is recommended to use non traditional: breathing gymnastic, Khadu gymnastic, Yoga and etc. [14, pg. 65]. To day's realities require studying and analysis of situation, working out of definite, substantiated offers on organization of military officers' physical perfection in conditions of special period.

Purpose, tasks of the work, material and methods

The purpose of the work is to determine demand and opportunities of military officers' physical perfection in conditions of positional defense.

- For achievement of our purpose we used the following *methods:* analysis of normative documents, which regulate military officers' professional functioning in ATO zone;
- Analysis of scientific and internet sources;
- Observation over professional functioning of military officers of scouts' company, of mechanized battalion from contact line of the parties, drivers of military automobile transport;
- Questioning of combat units' commanders, military officers, having combat experience;
- Stating experiment for determination of formation of military officers' applied skills.

Diagnostic of military officers' loads was fulfilled by their subjective feelings and assessed with 12 points' scale of Borg [15]. The research was conducted in summer time in passive phase of conflict. It was the period of holding of front positions at contact line of parties by units of mechanized brigade in conditions of positional defense.

Results of the research

Construction of ATO defense system envisages involvement of significant part of personnel for servicing at strong points (SP). Main elements of military officers' professional functioning are: continuous observation over assigned for defense sector; determination of targets and their shooting in case of attack on SP; engineering perfection

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of SP positions; measures on solution of everyday problems; maneuvering on SP position in case of gunning; fire; reloading of weapons. Variability and unpredicted character of enemy's actions create unstable rhythm of motor functioning of SP personnel. It does not permit to work out algorithm of their professional functioning. Hours of silence can immediately be changed with periods of fire confrontation. Provocation fire forces fighters to immediately take combat positions and it requires coordination skills. In period of defensive fight (most frequently in dark time) military officers shall bear combat equipment of over 24 kg weight. They move on short distances (up to 40 meters) in trenches and communications of strong point in bent position and with arms. Intensity of military officers' load during servicing on SP varies from 12 to 16 points. In fighters' opinion the main factors of their fighting capability's weakening in period of being on SP are: moral-psychological influence of situation; muscular fatigue from combat equipment; unusual methods of moving; long being in position for shooting.

Period of duty on SP is changed by equal by duration period of rest. During rest period personnel recreate fighting capability and prepare for next duty. Physical loads of personnel during rest are determined by character of everyday problems to be solved. They are usually of moderate intensity.

Functioning of scouts is of more intensive character (13–17points). By results of scouts' questioning (n = 26) we formed rating of importance of kinds of their training for successful professional functioning (see fig.1).

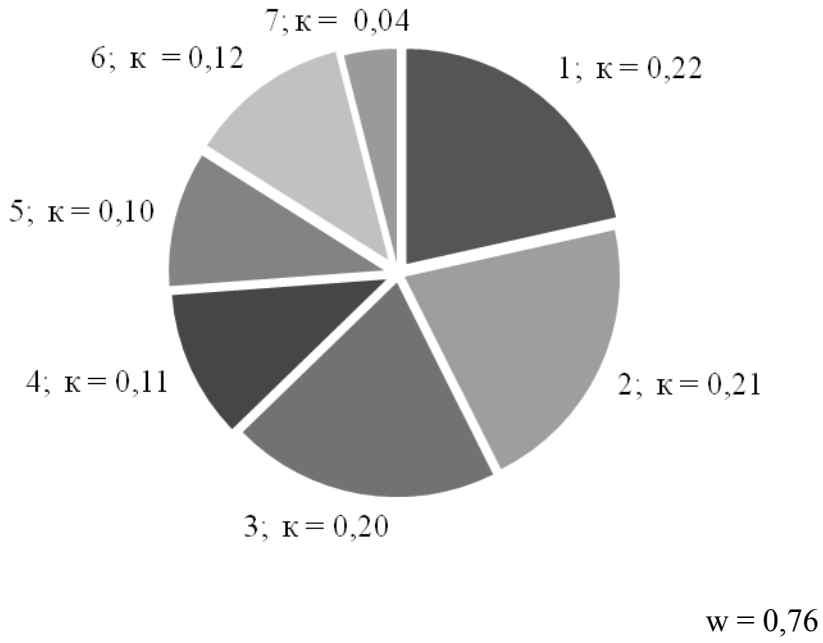

Fig.1. Rating of importance of kinds of scouts' training (by weight coefficient value, *к*), where:
1 – moral-psychological training; 2 – tactical-special training; 3 – fire training; 4 – engineering-sapper training; 5 – military topography; 6 – physical training; 7 – other kinds of training; w – coefficient of concordance.

Moral-psychological training is the basis of successful realization of tactical-special and fire trainings. In respondents' opinion it is based on mastered previously practical professional skills, abilities, confidence of scouts group's fighters in each other and concordance in actions. Insufficient rating of physical training is conditioned by character of tasks, which scouts fulfilled in conditions of positional defense. 84% of the questioned think that success of combat task's fulfillment depends on quickness, stealth, noiseless of actions; ability to immediately and adequately respond to change of situation. Among the most demanded physical qualities scouts call general, power and static endurance, dexterity. The most important motor skills they consider ability to overcome obstacles, moving by different means (secret, squatting, on bellies, defense with equipment and arms).

Professional functioning of automobile transport drivers is of low intensity. Most of transportations are realized in daytime that permits for drivers to fulfill professional duties in ordinary mode and do not break organism's physiological rhythm. Checks out the rout are followed by increased nervous-psychological tension, load on organs of hearing and eyesight because of high probability of attack on transport mean (blasting, ambush, gunning). Besides,

driving for long time in extreme conditions and means of individual protection causes pain in backbone, numbness of lower limbs. Fulfillment of even insignificant repair, adjustment of automobile's systems (mechanisms) requires proper power abilities and flexibility. Most of drivers (n = 23. 61%) understand usefulness of physical perfection for improvement of professional workability. Only 13% of them fulfill physical exercises for this purpose.

Characteristics of professional functioning of the tested categories of military officers permit to speak about importance of physical fitness component in structure of their fighting capability. Content of this concept envisages military officers' ability to demonstrate military applied motor skills, which they shall acquire before their going to ATO zone. The level of their skills was tested in stating experiment. Military officers were reminded technique of fulfillment of some physical exercises. Then they were offered to fulfill these exercises from the first attempt. For unification of the process we used 4 points' scale (see fig.2).

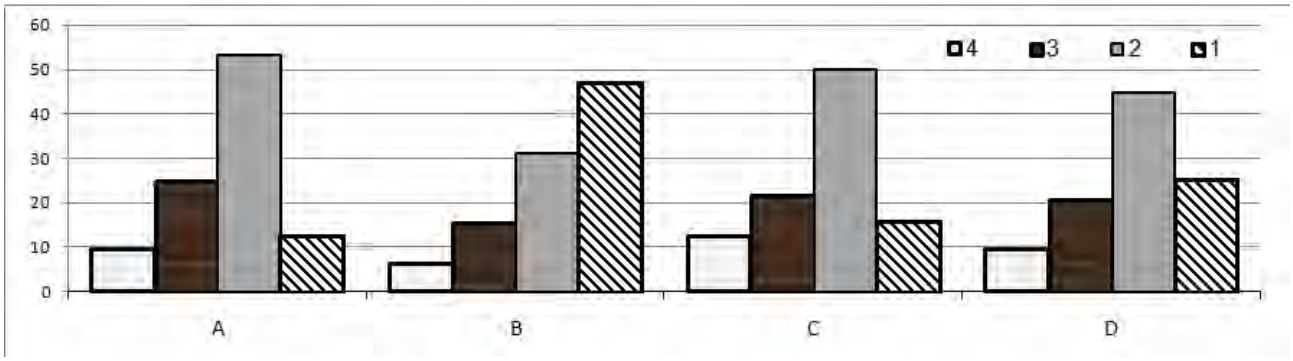

Fig.2. Relative indicators of applied motor skills formation in military officers (n = 32), where:
% - Percentage of military officers, who fulfilled exercise; A – exercise: throw of grenade with ammunition; B – exercise: overcoming of wall of 1.1 meters with ammunition; C – exercise: self-insurance when falling on back; D – mean indicator of applied skills' formation.
Assessment of exercise's fulfillment: 4 – exercise is fulfilled properly, without mistakes, easily; 3 - exercise is fulfilled properly, but with insignificant mistakes; 2 – exercise is fulfilled properly, but with rough mistakes; 1 – exercise is fulfilled wrongly.

Criteria of assessment were space-time and qualitative (accuracy of movements, economic character of them and energy).Results of experiment point at low level of important military applied skills' formation in mobilized military officers, especially in cases, where steady motor stereotype is required. We researched possibilities of correction of military officers' physical condition and organization of physical trainings in ATO zone. Besides, we considered conditions of military officers' training and importance of physical fitness component in structure of their fighting capability.

We questioned 76 military officers of age from 22 to 56 years. From them 87% were mobilized to MF of Ukraine, 72% – had experience of combat actions. Questioning results showed that physical fitness factor takes 4th place in rating of military officers' fighting capability. 63% respondents confirmed that it was possible to conduct physical perfection trainings in zone of combat actions. Part of the questioned (44%) thinks it purposeful to practice physical perfection in period of recreation of fighting capability. 27% desired to practice trainings. 82% of them were sure that it is necessary to have organizer of such trainings or better – instructor. It should be noted that absence of normative documents on organization of PT in ATO zone is not an obstacle for military officers, who have inner demand in physical perfection. As per our observations 11–19% of military officers find time and opportunities for trainings. Nearly all of them had sports achievements in the past, sports grades and practice physical perfection with accent on own sports specialization. The tasks of own physical perfection are understood by fighters as maintaining of organism's workability, physical condition, psychological release and formation of confidence in own abilities; enjoying of trainings.

Individual trainings are practiced in free from gunning and duties time. Choice of content of physical perfection depends on sports orientation of military officer, own bents, initiatives of sport active of the unit, environmental conditions and equipment of site for physical exercises. The most popular kinds of physical perfection

in ATO zone are power training (80%), sport games (16%), run (4%). Military officers use mainly simple in operation and production equipment: parallel bars, horizontal bars, weights, barbells, skipping ropes, punching bags. The equipment can be original and improvised, self-made.

Military officers note absence of commanders' exactingness to physical fitness of the subordinates; absence of methodic advices on physical perfection and organized practical consultations. Such position of commanders does not facilitate personnel's motivation for physical perfection and excludes this process from general system of maintaining of military officers' individual fighting capability.

Discussion

Factor of physical fitness is one of determining in ensuring of individual fighting capability of military officers and influences significantly on effectiveness of their professional functioning [16, pg.283]. Influence of this factor is traditionally actualized in period of CA, on stages of direct personnel's training for CA [17, 18] or when fulfilling tasks in extreme conditions [19, 20]. In existing conditions of military officers' mobilization and their further training it is rather difficult to ensure their proper physical fitness. It was confirmed by results of stating experiment. However, research of structure and character of personnel's professional functioning in durable conditions of positional defense confirmed specialists' opinion about possibility of organization of physical perfection trainings in combat conditions [13]. Such opportunities are restricted by CA intensity, character of environment, weather and everyday conditions and so on.

We confirmed leading role of inner motivation of military officers for realization of their demand in physical perfection [21, 22]. Our research showed that it is necessary to create sites for motor functioning and appropriate methodic provisioning in places of military units' location.

Conclusions

Content and character of military officers' professional functioning in ATO zone in conditions of positional defense condition variation of their physical loads' intensity from moderate to sub-maximal.

The fact that military shall be constantly in means of individual protection with full ammunition sets increased requirements to fitness of muscular skeletal apparatus of their organisms. Conditions of servicing in ATO zone in positional defense permit to organize individual trainings of power orientation and perfect some military applied motor skills.

Our further researches will be oriented on substantiation and working out of physical perfection programs for military officers of different age and professional groups.

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Conflict of interests

The author declares that there is no conflict of interests.

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POLITICAL INFLUENCE ON SPORTSMEN'S TRAINING SYSTEM IN OLYMPIC SPORTS

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Abstract. *Purpose:* to determine the place of Olympic sports in modern world; to analyze dynamic of its political, economic and social significance progress. *Material:* publications on the topic of this article were used as sources of information. *Results:* we characterized influence of Olympic sports on transformation of views and practical functioning in sphere of elite sportsmen's training. Main stages of modern Olympic sports' formation have been regarded. Strategy of elite sports' development in historical aspect has been presented. Changes in attitude of political leaders, state figures and general population to Olympic Games have been shown. Directions of development and perfection of elite sportsmen's training national systems have been outlined. *Conclusions:* recent years, potential of Olympic sports have being reflected in foreign and home policy of many countries. It resulted in drastic changes in spheres of organization, management, financing, material technical and personnel provisioning of sportsmen's training.

Key words: Olympic sports, policy, system, national, competition.

Introduction

Since1930-s of 20th century, Olympic sports has being gradually transformed from competitions between sportsmen, sports clubs and other organization into competitions between social-political systems. First it clearly was noticeably at Olympic Games and winter Olympic Games in 1936, which were used by Hitler Germany as vivid tool for demonstration of advantages of Nazi ideology. Following example of Germany, the work on preparation for Olympic Games and activation of participation in Olympic movement was increased in countries –allies of Germany – Austria, Italy, Hungary and Japan [7].

Success of German sportsmen at Olympic Games 1936 demonstrated high effectiveness of governmental role in elite sports' development as well as political potential of Olympic Games and sportsmen's successful performances. Results of Second World War and defeat of Germany caused nearly irrevocable loss of organizational and methodic experience of Olympic training. It became rather noticeable after seven years at Olympic Games 1952. At these Games Germany was quite helpless. German sportsmen did not win any gold medal and turned out to be at the end of third ten in resulting table [6].

Starting from Olympic Games 1952 long period of political opposition between USSR and USA, socialists and capitalist countries, countries of East and West had begun. In this opposition elite sports were used as tool of ideological struggle. However, political and sports figures avoided demonstration of attitude to sports successes as tool of "cold war". For example, president of the USA John Kennedy was seriously worried by defeats of American sportsmen. He noted that "United States faced severe challenge to their international prestige… One of criterion, by which we would be judged, is successes of our men and women on sports arenas… I call men and women of all kinds of sports to unite for superiority in sports competitions" [18]. Minister of Justice of the USA Robert Kennedy, brother of presidents, also reacted painfully to defeats of American athletes: "We do not want to read in newspapers that our country is the second after Soviet Union at Olympic Games… We want to be the first" [12].

In USSR leaders of the country did not use sports successes as argument in ideological struggle and political opposition. However, it did not prevent USSR from creation of highly effective system of state-public management of elite sports and sportsmen's preparation for the most important international competitions and Olympic Games. At the end of 1952 the basis of strategy of elite sports' development was initiated by state sports and physical culture administrative organ at Council of Ministers of USSR. Just after participation of Soviet sportsmen in Olympic Games in Helsinki, targeted program of preparation for Olympic Games and winter Olympic Games was offered. It pre-conditioned all further history of Soviet sports' development just up to breakup of USSR in 1991 [2, 3, 4, 9, 10, 14].

Realization of this strategy by four years' Olympic cycles was ensured exclusively by governmental organ, managing the branch. Potential of specialized higher educational establishments, scientific-research institutes and laboratories, sport societies and organizations was widely involved in solution of this task. Role of public organizations

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(federations of kinds of sports, national Olympic committee, voluntary sport societies, trade unions and etc.) reduced mainly to practical functioning on realization of the adopted strategy. In respect to main questions of sports' development this role had mainly nominal character [7].

In the beginning of 1960-s there was made unsuccessful attempt to pass over elite sports and Olympic training to public organization. It resulted in heavy defeat from USA team at Olympic Games in Mexico city in 1968, Return to state system of elite sports management (in 1969) quickly renewed leading positions in the world: convincing victory over USA team at Olympic Games 1972 in Munich (USSR won 50 gold medal, USA – 33). It principally distinguished sports' management system in USSR from practiced in most of western countries. In western countries elite sports sphere was included in competence of federations of kinds of sports, national Olympic committees, and sport clubs and so on.

The practiced in USSR system of elite sports' development evidently surpassed (especially in 1980-s – 1990-s) any system in western world by effectiveness of sportsmen's performances at international and Olympic arenas. However, for propagandistic and ideological aims it was used only on mass media level.

Experience of development of elite sports and Olympic training in Soviet Union became an example for other countries of socialist camp. The most brightly it manifested in sports of German Democratic Republic, Bulgaria, Romania, Poland, and Republic of Cuba. In some of these countries political and ideological orientation of usage of successes on Olympic arena was more acute than in USSR. In particular, such situation was in GDR. After successful performances on 19th Olympic Games in Mexico-city, GDR authorities marked out Olympic sports as one of main spheres of their functioning. It shall demonstrate effectiveness of social-political system, foreign and home policy of the country; ensure consolidation of society. In GDR idea about not political character of sports were criticized and sportsmen's achievements were used as powerful tool of propaganda [12, 13]. The same approach to participation in Olympic Games was realized in Cuba.

Purpose, tasks of the work, material and methods

The purpose of the work: is to analyze dynamic of Olympic sports development in modern world; its political, economical and social significance as well as to characterize influence of Olympic sports' development on transformation of views and practical functioning in sphere of elite sportsmen's training. As sources of information we used publications on topic of this article.

Results of the researches. Discussion

The turning point in Olympic Games' history was rising of Juan Antonio Samaranch to leadership of IOC in 1980. He was initiative, wise and keen. His being the leader of IOC influenced radically on popularity and significance of Olympic Games in life of world community. Sharp change of IOC polity in respect of politicization, professionalization and commercialization of Olympic Games became a powerful factor of their development. In past decades IOC tried to isolate Olympic Games and Olympic sports from these processes. New president changed policy cardinally. IOC could demonstrate political and social attractiveness of Olympic Games, their exclusive significance for positive image of countries. It facilitated consolidation of nation, development of patriotism and national proud, strengthening of arena of international cooperation. Not less important was attracting of mass media, TV, big business – the largest companies and leaders on commodities and services markets – to Olympic Games. These companies desired that their brands would have been associated with Olympic Games, their symbols and values [5]. In this connection removal of item about amateur character from Olympic chart was quite natural as well as admittance of sportsmen-professionals to participation in Olympic Games. So intensive commercialization of Olympic kinds of sports, development of sponsorship system in respect to international and national sports federations, National Olympic committees and sportsmen personally is being continued [6].

And here, all potentials of cross effect manifested. Increase of Olympic Games' political significance facilitated attraction of TV companies' and Business representatives' interest. Interest and active functioning of the latter ensured strengthening of Olympic Games' political attractiveness. To the mentioned we can add: financial independence, political significance of IOC, Olympic Games, sports federations, National Olympic committees, interest in increasing of sportsmen's professionalism. The growth of Olympic Games' popularity is the most vividly demonstrated by growth of TV companies' expenditures for the right to broadcast Olympic Games. Expenditures of TV companies for the right to broadcast Olympic Games in London in 2012 (comparing with expenditures for broadcasting of Moscow Olympiad in 1980) increased 20 times. Expenditures for broadcasting of winter Olympic

Games in Sochi, in 2014, (comparing with expenditures for Olympic Games in Lake Placid in 1980) increased 40 times [7, 16].

The same changes touched also competition of cities and countries for the right to be the place of Olympic Games and winter Olympic Games. IOC had to give right to be the place of Olympic Games 1984 to Los Angeles without required in such case governmental support of the country (because there were no other countries-candidates) At finalizing session of IOC delegations form Chicago, Madrid, Tokyo and Rio de Janeiro struggled for the right to be the place of Olympic Games 2016. These delegations were headed by president of USA, king of Spain, prime ministers of Japan and Brazil. Also situation in respect to finance expenditures for conduct of Olympic Games and winter Olympic Games changed [7].

Permanent increase of elite sports' popularity and significance of successes on international sports arena at the end of 20th and beginning of 21st centuries resulted in radical change of political leaders' and general population's attitude to Olympic Games and achievements of national teams on them. Countries already can afford to endure shock, which was endured by Great Britain after Olympic Games in 1996. This country turned out to be on 36th position in final table, having only one gold medal. Its historical competitor (team from France) was on fifth position with 15 gold medals. It became a serious stimulus for development and perfection of national systems of elite sportsmen's training. Alongside with different sports organization and educational boards, noticeable political and business figures started activity in this process. As a result in many countries elite sports became one of strategic spheres of functioning, factor of national prestige, consolidation and self affirmation of nation, development of national identity and unity [15, 17, and 19]. Financial potential of sports also sharply increased. Infrastructure of elite sportsmen's training, of mass sports, of population's involvement in healthy life style became intensively develop. In many countries these directions of work became a part of state policy with formation of appropriate strategy and required financing. In past years the picture was quite opposite in most countries [7, 8, 16].

Naturally, in most of highly developed countries these changes resulted in substantial growth of achievements and sharp increase of competition on international sports arena. In policy of China experience of Soviet sports and its intensive modernization take place.

In these conditions competitiveness of athletes and teams, their achievements on international competitions and on Olympic Games became to large extent to be conditioned by influence of multiple external factors. These factors are closely connected with organizational, financial and material-technical components. Intensive development of these components radically changed requirements to training of sportsmen and their surrounding. Effective training and competition's functioning required increasing of financing of many sports facilities' building. Besides it was necessary to ensure production and constant perfection of modern sport form; sport equipment; stimulators and diagnostic equipment; rehabilitation and recreation means. It opened new opportunities for involvement of different qualified specialists and ensuring them with all necessary for effective work [6].

Such changes permitted for some specialists to present modern state and development of sports as "global sporting arms race". Just so was titled monograph of group of European specialists ("The global sporting arms race", 2008, edition «Meyr Meyer») [15]. Such interpretation of competition medium on international level was not properly assessed. It became replicated in many scientific publications. Let us note that competition in many spheres of human activity on global level (world policy, military opposition, economic, different branches of industry and so on) is much stronger that in elite sports. Besides, methods of competition struggle often are out of commonly accepted frames. They are not comparable with competition in elite sports. Such competition can be an example of sound international competition by its uncompromising character. However, even in these spheres specialists try to avoid aggressive rhetoric. They understand the danger of usage of such terms as "arms' racing", "global arms racing", "cold war" and other.

The most surprising is the fact that these terms and concepts were introduced by representatives of academic circles of European universities in sport science. They are representatives of countries, which are rather far from successful participation in declared by them "global arms racing" [15]. The presence of strongest competition on world and Olympic arenas is conditioned by intensive development of sports and systems of Olympic training in 25-30 counties of the world. These countries have rather high potential for sports' development at present stage. With it, it should be noted that the strongest competition in modern sports touched not only purely sports' component. It is noticeable in competition of many sponsors and partners of Olympic movement; in strive of cities-organizers of

Olympic Games to surpass their predecessors. Besides, there is functioning of a number of international sports federations on expansion of their participation in Olympic Games.

Conclusions

Olympic sports are a global phenomenon of modern life that is reflected in its political, social and economic power; in its exclusive popularity in world society.

Recent years potential of Olympic sports have had found its reflection in foreign and home policies of many countries. It facilitated positive image of countries, consolidation of nation, development of patriotism and national proud; fruitful international cooperation. Such changes cause great interest of world community, TV and other mass media, representatives of big business. It resulted in radical changes in organization, management, financing, material-technical and personnel provisioning of sportsmen's training as well as in creation of highly effective national systems of preparation for Olympic Games and other international competitions.

Conflict of interests

The author declares that there I no conflict of interests.

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GENDER PICULIARITIES AND DISTINCTIONS IN PHYSICAL CONDITION's SELF DESCRIPTION OF DIFFERENT AGE CATEGORIES GIRLS AND BOYS

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Abstract. *Purpose:* to study gender peculiarities and distinctions in physical condition's self-description of schoolchildren. *Material:* in the research schoolchildren of 5-11 form (boys – n=177, girls – n=188) participated. Test-questionnaire "Self description of physical condition" was used. *Results:* it was found that correlations of indicators of all age categories have gender distinctions. It was determined that boys associate heir health with own self-assessment and physical qualities: coordination of movements, flexibility. Girls connect their health with physical functioning and own physical abilities. Boys connect physical coordination of movements with strength. Girls connect it with appearance. Besides, it was found that boys connect their self-assessment directly with their strength and physical activity. For girls these indicators are not very important. *Conclusions:* approaches to solution of gender stereotypes and imbalance in adolescents' physical development are recommended. It is purposeful to work out conception of gender approach to physical education. It would permit: to facilitate development of individual bents and talents of pupils of different sex; to overcome sex-role stereotypes; more effective formation of physical culture values.

Key words: schoolchildren, gender distinctions, physical education, self-assessment.

Introduction

In sphere of education elimination of gender difference on all its levels has been becoming more and more important. Achievement of gender equality in education envisages application of special technologies, which would consider specificity of male and female psychology and ensure balanced gender component in education.

As on to day one of priority direction of state policy in development of comprehensive school is: orientation on education of pupils of different sex; consideration of age and sex features in formation of physical culture and healthy life style values. Physical culture lessons play important role in solution of urgent problems of gender approach in physical education. Such orientation of lessons facilitates increase of quality, effectiveness and accessibility of physical culture education. It permits to consider larger extent bents, talent and interests of pupils of different sex. All these require changes in content of program material, in organization of teaching-educational process; differentiation and individualization of means and methods of training [8].

At the beginning of 20th century in domestic pedagogic and psychology serious attention was paid to problem of sex education. In scientific works of that time original ideas about pedagogic, psychology and hygiene of pupils' sex development were substantiated and these ideas are still important now [6]. Recent years there have appeared the quantity of scientific researches, devoted to gender education and gender pedagogic [1, 2, 9, 25, 26, 34]. The authors came to the following conclusions:

- To help young peopleo in formation of adequate self-assessment and own positive image is especially important. It is connected with belief in own strength and potentials. Just they are key element in achievement of success in everyday life [41];
- Type of self-assessment, of future principle of health teachers' professionally important qualities formation influence on responsible attitude to own professional functioning, on future relations with children [40];
- Duration of training experience has statistically significant positive correlation with level of sportswomen's self-assessment [32];
- Trainings shall have different targets: formation of experience of positive attitude towards themselves; cultivation of active life position habits; consolidation of high self-assessment [35].

The task of education in respect to gender problems was determined in works by T. Govorun [6], O. Kikinedzhy [11], L. Tatarintseva [20]. Conceptual-category apparatus of gender education was presented in researches of V. Kravets [11], A. Mudryk [18], L. Shtyliova [25], S. Vykhor [5], A. Shevchenko [24]. In works by O. Babeshko [1], G. Bezverkhnia [2], A. Moskaliova [17] and other scientists, social and cultural factors of formation of children's and adolescents' interest to physical culture are regarded. It is known that children's physical development requires systemic approach. Gender approach shall be its component. O. Fashuk elucidated importance of this problem at modern stage. The author stresses significance 0of gender approach's implementation in physical education of schoolchildren. Such approach shall be understood as expansion of vital space for development of individual bents

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and talents of every child. It can help to form certain strategy of schoolchildren's involvement in systemic practicing of physical culture, cultivation of their positive attitude to motor functioning [21].

Researches of foreign scientists were oriented on solution of problem of self-assessment in different spheres of educational space. They analyzed influence of 12 weeks' program of control over weight, developed for application in establishments of primary medical assistance. The authors found dependence of self-respect and symptoms of depression on state of expectation [28]. Testing of children and adolescents with excessive weight showed their lower social competence and low self-assessment. The authors recommend planning of measures, oriented on strengthening and rising of self-assessment [38]. In other research connection between self-assessment and body condition was confirmed [42]. Influence of self-assessment and assessment of peers in school for problem children was studied. The authors offer program for rising of self-assessment, which helps to recognize the name of participant and increases sympathy of peers [39]. They studied links between global self-assessment, perception of sports competence and level of motor functioning in primary school children [37]. Interconnection of personal gender identity and gender problems in group of children studied. The authors noted that children with high self-assessment and strong own gender identity are more successful in different aspects of learning [27]. Also interconnection of self-assessment of immobile way of life of schoolchildren was researched. Dependence between psychic health and self-assessment was found [30]. Besides, dependence between content with own body and self-respect in adolescent and in adult age was studied. Results of factorial analysis showed that correlation between content with own body and self-esteem does not weaken with age [45].

Analysis of this problem's researches points at contradictions between social significance of gender approach and absence of scientifically grounded conditions for its realization in comprehensive educational establishments. At the same time there are no holistic scientific researches on the mentioned topic. All these require scientific researches. Earlier we studied gender peculiarities of schoolchildren's value orientations in sphere of physical culture and sports. We determined interconnection between motivation sphere and psychological sex of adolescents [12-16, 33]. At present stage we study specific features of self description of schoolchildren's physical condition as well as interconnection of physical "self" indicators and general self-assessment.

Psychologists understand self-assessment as individual's attitude to him (her) self, which is manifested as approval or disapproval of oneself as personality [5, 8]. M.J. Variy determined self-assessment of personality as "… awareness of own identity independent on external impacts. It is formed in process of one's self cognition" [4]. Human self-assessment if formed under influence of different factors. Independent on the basis of judgment, in self-assessment it is always of subjective character [4]. Adolescent age is regarded by scientists as psychological and demographic group with its own laws and specific norms of behavior. D. Wexler stresses dependence of positive self-assessment of adolescent and his (her) perception by peers on his (her) physical attractiveness [44]. It is one of the most important components of adolescents' relations. Level of physical "self" adequacy influences on orientation of self-concept, attitude of personality to him (her) self [15].

Purpose, tasks of the work, material and methods

The purpose of the work is to study gender features and distinctions in self-description of physical condition of different age schoolchildren.

The tasks of the research: to determine peculiarities of physical conditions' self perception by schoolchildren; to study age and sex specific features of boys' and girls' attitude to own physical "self"; to find out influence of physical "self" indicators on general schoolchildren's self-assessment. In experiment test-questionnaire by Ye.V. Bochenkova "Self-description of physical condition" was used. This test is a modified variant of well known methodic of A.M. Prykhozhan [19]. The questionnaire contains 70 judgments from sphere of human physical development. It determines 10 indicators of physical condition and indicator of general self-assessment: health, motor coordination; physical functioning; structure of body; sports abilities; physical "self"; appearance; strength; flexibility; endurance; self-assessment.

In the research pupil of 5-11 form (n=365) participated. Among them there were: 177 boys and 188 girls.38 pupils practiced certain kind of sports (swimming, basketball, volleyball, athletic gymnastic, wrestling, Thae-quan do). Other pupils attended usual physical culture lessons without additional practicing sports. Assessment of results was fulfilled by correlating the received data with generally accepted standards of self-assessment of personality.

Results of the research

As per results of factorial analysis we marked out two factors. First factor included 7 components, which characterized sports orientation of respondents. They were: sports abilities, endurance, physical functioning, motor coordination, strength, flexibility, health. The second factor included 4 components, which characterized appearance of respondents. They were: appearance, global physical "self", self-assessment and slenderness.

For classification of observations over schoolchildren we conducted cluster analysis of both factors. It resulted in receiving of 4 clusters, which included influences of every component.

First cluster included respondents, who had weakened self-assessment of appearance and who assessed own physical potentials objectively. Such pupils put desire to practice sports and improve sports abilities higher than appearance. This cluster included 48 pupils (21 boys and 27 girls). It was 13.1% from general quantity of respondents.

Second cluster included respondents with increased assessment of their physical abilities and too high opinion of appearance. For such pupils sports achievements and appearance are of equal importance. They were 182 persons (115 boys and 67 girls). It was 49.8% from total quantity of pupils.

Third cluster included respondents with weakened opinion of their physical abilities and low opinion of their appearance, Own appearance is of greater importance for them than sport achievements and abilities (n=81). They were 31 boys and 50 girls. It was 21.1% from total quantity of pupils.

Fourth cluster included indifferent pupils, who had no desire to practice sports and pay attention to their appearance. They were 10 boys and 44 girls. It was 14.7% from total quantity of pupils.

From total quantity of pupils (n=365) there were actually 50% boys and girls, for whom it was equally important: to practice sports; to improve themselves physically and pay attention to their appearance. Most of them were boys. They were balanced in their priorities. Among such pupils (n=115) there were: 33 boys of junior school age; 51 boys (of 14-15 years' age); 31 boys of senior school age (16-17 years old). In total it was 65% boys and 35% girls (from total quantity of pupils). To receive more detail information we conducted correlation analysis between indicators of respondents' physical condition self-description.

Table 1. Correlations between indicators of physical condition's self-description of junior school age boys

	health	Motor coordination	Motor functioning	slenderness	Physical abilities	Global physical "self"	appearance	strength	flexibility	endurance	Self-assessment	General level
health	1.000	**0.299**	0.124	0.157	0.159	-0.048	0.203	0.022	-0.139	**0.411**	0.001	**0.290**
Motor coordination		1.000	**0.626**	**0.441**	**0.754**	**0.542**	0.121	**0.518**	**0.735**	**0.577**	**0.529**	**0.853**
Motor functioning			1.000	-0.055	**0.653**	**0.431**	0.011	**0.454**	**0.717**	**0.394**	**0.600**	**0.728**
Slenderness				1.000	0.253	**0.288**	0.017	0.155	0.265	0.123	0.106	**0.360**
Physical abilities					1.000	**0.628**	0.172	**0.671**	**0.700**	**0.503**	**0.623**	**0.857**
Global physical "self"						1.000	**0.430**	**0.729**	**0.695**	0.260	**0.761**	**0.787**
appearance							1.000	0.233	0.159	**0.334**	**0.323**	**0.376**
Strength								1.000	**0.623**	0.094	**0.670**	**0.721**
Flexibility									1.000	**0.423**	**0.664**	**0.828**
Endurance										1.000	0.268	**0.602**
Self-assessment											1.000	**0.780**

General level												1.000

Table 2. Correlations between indicators of physical condition's self-description of junior school age girls

	health	Motor coordination	Motor functioning	slenderness	Physical abilities	Global physical "self"	appearance	strength	flexibility	endurance	Self-assessment	General level
health	1.000	**0.476**	-0.012	0.241	0.201	0.141	0.192	-0.073	**0.308**	0.256	**0.414**	**0.517**
Motor coordination		1.000	**0.449**	**0.304**	**0.636**	**0.647**	**0.570**	0.038	**0.654**	**0.544**	**0.753**	**0.900**
Motor functioning			1.000	0.139	**0.546**	0.069	-0.065	0.070	**0.477**	**0.620**	0.237	**0.529**
Slenderness				1.000	**0.284**	**0.472**	**0.412**	0,149	-0.129	0.066	0.246	**0.415**
Physical abilities					1.000	**0.370**	**0.291**	**0.452**	**0.437**	**0.636**	**0.368**	**0.771**
Global physical "self"						1.000	**0.849**	0.059	0.188	0.077	**0.713**	**0.643**
appearance							1.000	-0.001	0.166	-0.012	**0.714**	**0.577**
Strength								1.000	0.044	0.212	-0.088	0.231
Flexibility									1.000	**0.754**	**0.455**	**0.677**
Endurance										1.000	0.232	**0.685**
Self-assessment											1.000	**0.737**
General level												1.000

Analysis of correlations was conducted separately, by results of testing of different age categories' pupils. Indicator "health" of boys correlates with indicators "motor coordination" (r=0.299) and "endurance" (r=0.411). In girls, indicator "health" is influenced by: "motor coordination" (r=0.476), "flexibility" (r=0.308) and "self-assessment" (r=0.411). "Motor coordination" of boys correlates with "strength" (r =0.518). In girls "motor coordination" correlates with "appearance" (r=0.570). In boys such correlation is absent. In boys "physical functioning" correlates with "global physical "self" (r=0.431), "strength" (r=0.454), "self-assessment" (r=0.600). In girls correlations between such indicators are absent. But correlations between other indicators were found: "slenderness" and "physical abilities" (r=0.284); "slenderness" and "appearance" (r=0.412); "physical abilities" and "appearance" (r=0.291). In boys there are no correlations between these indicators. In boys there is strong correlation between "global physical "self" and "strength" (r=0.729) and "global physical "self" and "flexibility" (r =0,695). In girls such correlation is absent. Boys connect their appearance directly with endurance (r =0.334). Boys connect strength with self-assessment (r=0.670). For girls such connections are insignificant.

Thus, we determined certain difference in correlations of 10-12 age boys' and girls' self-description indicators. Boys connect motor coordination with strength, while girls – exclusively with their appearance. In this case we can assume influence of gender stereotypes on self-description of physical condition. Besides, we found that boys connect their self-assessment directly with their strength and physical functioning. For girls these indicators are

insignificant. "Global physical "self" strongly influences on boys' self-assessment (r=0.761), while on girls' self-assessment the same influence is rendered by "appearance" (r=0.714) and "motor coordination" (r=0.753). We found that general self assessment of junior school age boys is influenced by greater quantity of indicators than on girls'.

13-15 years' age pupils' distinctions in correlations between self-description indicators are given in tables 3 and 4.

Table 3. Correlations between indicators of physical condition's self-description of middle school age boys

	health	Motor coordination	Motor functioning	slenderness	Physical abilities	Global physical "self"	appearance	strength	flexibility	endurance	Self-assessment	General level
health	1.000	**0.511**	**0.330**	0.226	**0.424**	**0.392**	**0.380**	**0.457**	**0.325**	**0.368**	**0.355**	**0.541**
Motor coordination		1.000	**0.581**	**0.422**	**0.740**	**0.643**	**0.632**	**0.738**	**0.658**	**0.658**	**0.599**	**0.822**
Motor functioning			1.000	0.181	**0.722**	**0.676**	**0.528**	**0.609**	**0.619**	**0.661**	**0.677**	**0.781**
Slenderness				1.000	**0.511**	**0.573**	**0.574**	**0.392**	**0.259**	**0.424**	**0.479**	**0.556**
Physical abilities					1.000	**0.782**	**0.791**	**0.799**	**0.594**	**0.702**	**0.688**	**0.895**
Global physical "self"						1,000	**0.813**	**0.762**	**0.626**	**0.684**	**0.835**	**0.897**
appearance							1.000	**0.774**	**0.517**	**0.617**	**0.758**	**0.844**
Strength								1.000	**0.627**	**0.778**	**0.712**	**0.881**
Flexibility									1.000	**0.626**	**0.654**	**0.760**
Endurance										1.000	**0.669**	**0.832**
Self-assessment											1.000	**0.859**
General level												1.000

Table 4. Correlations between indicators of physical condition's self-description of middle school age girls

	health	Motor coordination	Motor functioning	slenderness	Physical abilities	Global physical "self"	appearance	strength	flexibility	endurance	Self-assessment	General level
health	1.000	**0.401**	**0.430**	**0.484**	**0.396**	**0.427**	**0.345**	**0.394**	0.267	**0.487**	**0.339**	**0.595**
Motor coordination		1.000	**0.565**	**0.393**	**0.746**	**0.431**	**0.301**	**0.604**	**0.683**	**0.747**	**0.486**	**0.750**

Motor functioning			1.000	**0.337**	**0.796**	**0.426**	0.131	**0.625**	**0.634**	**0.734**	**0.299**	**0.726**
Slenderness				1.000	**0.406**	**0.659**	**0.749**	**0.297**	**0.480**	**0.474**	**0.563**	**0.695**
Physical abilities					1.000	**0.632**	**0.368**	**0.768**	**0.688**	**0.847**	**0.596**	**0.868**
Global physical "self"						1.000	**0.749**	**0.620**	**0.558**	**0.604**	**0.795**	**0.822**
appearance							1.000	**0.319**	**0.388**	**0.375**	**0.683**	**0.637**
Strength								1.000	**0.576**	**0.808**	**0.695**	**0.802**
Flexibility									1.000	**0.771**	**0.513**	**0.781**
Endurance										1.000	**0.696**	**0.904**
Self-assessment											1.000	**0.793**
General level												1.000

In boys indicator "health" correlates with all other indicators (except "slenderness"). In girls indicator "health" correlates with all other indicators (except "flexibility"). In boys "physical functioning" also correlates with all indicators (except "slenderness"). In girls "physical functioning" also correlates with all indicators (except "appearance").

16-17 years' age pupils' distinctions in correlations between self-description indicators are given in tables 5 and 6.

Table 5. Correlations between indicators of physical condition's self-description of senior school age boys

	health	Motor coordination	Motor functioning	slenderness	Physical abilities	Global physical "self"	appearance	strength	flexibility	endurance	Self-assessment	General level
health	1.000	**0.489**	0.146	0.082	0.106	0.066	-0.003	0.268	**0.327**	0.198	**0.300**	**0.387**
Motor coordination		1.000	**0.373**	-0.049	**0.480**	**0.424**	**0.336**	**0.566**	**0.634**	**0.475**	0.250	**0.647**
Motor functioning			1.000	0.174	**0.628**	**0.422**	**0.286**	**0.546**	**0.360**	**0.374**	**0.278**	**0.632**
Slenderness				1.000	0.139	**0.288**	0.199	-0.132	-0.072	-0.077	0.051	0.253
Physical abilities					1.000	**0.805**	**0.669**	**0.804**	**0.439**	**0.709**	**0.554**	**0.866**
Global physical "self"						1.000	**0.838**	**0.661**	**0.489**	**0.731**	**0.551**	**0.865**
appearance							1.000	**0.476**	**0.313**	**0.579**	**0.607**	**0.726**
Strength								1.000	**0.477**	**0.680**	**0.503**	**0.785**

Flexibility									1.000	**0.633**	**0.524**	**0.683**
Endurance										1.000	**0.560**	**0.800**
Self-assessment											1.000	**0.701**
General level												1.000

Table 6. Correlations between indicators of physical condition's self-description of senior school age girls

	health	Motor coordination	Motor functioning	slenderness	Physical abilities	Global physical "self"	appearance	strength	flexibility	endurance	Self-assessment	General level
health	1.000	0.195	**0.259**	-0.062	**0.253**	0.174	-0.077	**0.242**	0.116	0.177	0.029	**0.345**
Motor coordination		1.000	**0.442**	0.209	**0.681**	**0.422**	**0.288**	**0.665**	**0.535**	**0.538**	**0.349**	**0.783**
Motor functioning			1.000	-0.119	**0.425**	0.121	-0.041	**0.422**	0.045	**0.449**	-0.071	**0.455**
Slenderness				1.000	0.189	**0.666**	**0.285**	0.209	**0.325**	0.107	**0.360**	**0.473**
Physical abilities					1.000	**0.541**	**0.286**	**0.785**	**0.364**	**0.732**	**0.380**	**0.837**
Global physical "self"						1.000	**0.621**	**0.486**	**0.378**	**0.289**	**0.714**	**0.792**
appearance							1.000	0.210	**0.239**	-0.013	**0.677**	**0.486**
Strength								1.000	**0.270**	**0.707**	**0.270**	**0.781**
Flexibility									1.000	**0.252**	**0.371**	**0.569**
Endurance										1.000	0.096	**0.657**
Self-assessment											1.000	**0.593**
General level												1.000

Boys' indicators "health" correlates with "motor coordination" (r=0.489), "flexibility" (r=0.324), "self-assessment" (r=0.300). Girls' "health" correlates with "physical functioning" (r=0.259), "physical abilities" (r=0.253) and "strength" (r=0.242). Boys' "physical functioning" correlates with all indicators of self-descriptions (except "slenderness"). Girls "physical functioning" correlates only with "motor coordination" (r=0.442), "health" (r=0.259), "physical abilities" (r=0.425), "strength" (r=0.422) and "endurance" (r=0.449). Girls' indicator "slenderness" correlates with "global physical "self" (r=0.666), "appearance" (r=0.285), "flexibility" (r=0.325), "self-assessment" (r=0.360). In boys this indicator correlates only with "global physical "self" (r=0.288). Boys' "endurance" correlates with self-assessment (r=0.560). In girls such correlation is absent.

Comparison of senior school age boys' and girls' results showed significant distinctions in correlations of indicators. Boys have strong connection between "global physical self" and "appearance" (r=0.838). In girls such correlation is very low (r=0.289). But they have high correlation between "global physical "self" and "self-assessment" (r=0.714). Boys connect their health with own self-assessment and following physical qualities: motor coordination and flexibility. Girls connect their health with physical functioning and own physical abilities. Also attracts attention the fact that general level of girls' self description is influenced by "motor coordination" (r=0.783). In boys this indicators is much lower (r=0.647). Boys' indicator "appearance" has rather high correlation coefficient with general level of self-description (r=0.486). This indicator exceeds significantly girls' indicators.

Results of researches showed substantial gender distinctions between correlations of self description of respondents, who practice and who do not practice sports. Middle school age girls-sportswomen's general self-assessment level is influenced by "endurance" (r=0.976), "self-assessment" (r=0.917) and "appearance" (r=0.963). In girls, who do not practice sports, general level of self-assessment is influenced by indicator "health" (r=0.648). In sportswomen there is no such correlation. Self assessment of senior school age sportswomen is influenced mostly by four indicators: "appearance" (r=0.890), "endurance" (r=0.883), "global physical "self" (r=0.801) and strength" (r=0.740). Self-assessment of girls, who do not practice sports, is substantially influenced only by "global physical "self" (r=0.793).

Boys-sportsmen have much higher indicators, which influence on general level of self-assessment than boys, who do not practice sports: "endurance" (r=0.808 against r=0.734), "strength" (r=0.787 against r=0.676), "flexibility" (r=0.700 against r=0.618) and "self-assessment" (r=0.719 against r=0.508). But indicators "health", "slenderness" and "motor coordination" of boys, who do not practice sports, are much higher than of sportsmen's: "slenderness" (r=0.555 against r=0.164), "health" (r=0.530 against r=0.259), "motor coordination" (r=0.882 against r=0.492). In boys, who practice sports, there is strong correlation between appearance and level of self-assessment (r=0.674). In boys, who do not practice sports, this correlation is weak (r=0,312).

If to compare in gender aspect senior pupils, in boys, who do not practice sports we can see strong correlation between physical abilities and appearance (r=0.792). In girls this indicator is rather low (r=0.378). In senior school age girls, who do not practice sports, there is strong correlation between "health" and "endurance" (r=0.831). In boys this correlation is weak (r=0.368). In girls-sportswomen there is correlation between indicators "slenderness" and "global physical "self" (r=0.899). In boys this correlation is weak (r=0.668). Besides, "slenderness" and "appearance" correlate with each other (r=0.883) as well as "self assessment" (r=0.916). In boys these indicators are lower (r=0.548) and (r=0.237).

Discussion

Analysis of results of the research shows that there are gender distinctions in boys' and girls' self assessment of their physical "self". In researches of foreign specialists [29, 31, 36] also substantial difference between self assessments of pupils' motor fitness was determined. Boys more emotionally (than girls) endure their defeats in individual and team sports competitions. Researchers point at the fact that girls have reduced opinion of their own physical potentials. In boys, quite opposite tendency is observed. In our researches we did not confirm the facts of girls reduced self-assessment. It also has rather high level. Especially it concerns girls-sportswomen. We found certain difference between correlations of boys' and girls' self description.

In researches by V.V. Tsybulska influence of motivation for professionally-applied physical training of pedagogic HEEs students is shown. The author determined physical condition's self assessment level of full time and extra-curriculum girl students. 2nd year girl students assess motor coordination lower than all other indicators of self description. Girls' "slenderness" directly influences on general self-assessment. This fact coincides with results of our researches [23, 43]. In researches by Ye.V. Bochenkova questionnaire "Self-description of physical condition" was used. The author found that boys' self assessment was to unrealistically too high. They assessed themselves higher than girls [3]. The author admits that such data do not coincide with reality. Girls assessed their appearance higher than boys. Ilyin Ye.P. notes that question of sex distinctions in boys and girls self assessment requires more specific consideration. The author thinks that it shall be studied in two aspects. First, how respondents regard own "self" image. Secondly, who of them assess him (her) self more adequately [9]. We agree with this opinion. But the data of these authors probably depend on the used methodic, assessed qualities and age of respondents.

Goriachov V.V. analyzed psychological-pedagogic conditions of development of senior pupils' conscious attitude to health related physical culture functioning. The author considered gender factor of respondents. In his research it was determined that adequacy of schoolchildren's attitude to own health depends on individual's self-assessment, on knowledge about him (her) self, on adequate self description of physical "self". But in this research there were found no distinctions when determining conscious attitude to health related physical culture functioning [7]. The mentioned research concerns only pupils' self assessment of own health. That is why we can only agree with conclusions of the author. But in this case comparison of results was not correct. Fedorenko Ye.O. studied motivation of senior pupils for specially organized motor functioning. The author studied level of senior pupils' self assessment [22]. Her results witnessed about tendency to increasing of boys'and girls' self assessment. With it the highest self assessment was of boys. It coincides with results of our previous research. The conducted by us analysis of scientific works did not find holistic scientific researches, which would be devoted to self description of pupils physical condition with further factorial and correlation analysis of physical condition indicators.

Conclusions

The received results permit to affirm that there are significant gender distinctions in correlations between physical condition's self-description of different age categories' pupils. Boys connect self assessment with strength and physical functioning. Girls connect it with their appearance and motor coordination. It was found that general self-assessment of junior school age boys is influenced by larger quantity of indicators than on girls'.

Comparison of pupils' physical condition self description indicators (those who practice and who do not practice sports) showed certain distinctions. Such distinctions substantially distinguish attitude to own self of boys and girls, who practice sports from other (who do not practice sports). Analysis of our research's results witness about presence of gender stereotype problem and imbalance in physical education of adolescents.

We consider it to be purposeful to work out conception of gender approach in physical education. It would permit the following: facilitate development of individual bents and talents of different sex pupils; overcoming of sex-role stereotypes; more effective formation of physical culture values.

Our further researches will be devoted to comparison of results of physical condition's self description with physical culture control normative for boys and girls. The purpose of such research will be determination of gender distinctions in adequacy of physical condition self assessment of pupils.

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EFFECTIVENESS OF YOGA-AEROBIC MEANS' APPLICATION IN PHYSICAL EDUCATION OF PRIMARY SCHOOL PUPILS

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Abstract. *Purpose:* to determine influence of health related technology on physical condition level of primary school pupils. *Material:* in the research two groups of first form pupils participated: control group (n=28) and experimental group (n=26). Level of children's physical fitness was determined with the help of isolated motor tests. At home pupils fulfilled independently and with parents the learned at classes exercises for prophylaxis of posture disorders and for stretching. During fulfillment home tasks or other work in sitting position children were involved by parents in practicing of the worked out by us physical exercises' breaks. *Results:* we observed rising of pupils' physical fitness level: flexibility, ability to keep static balance, power endurance of back and abdomen muscles. To the highest extent yoga aerobic means influenced on flexibility and static balance indicators. *Conclusions:* when choosing physical exercises for short break in work we considered content of pupils' learning functioning at definite lesson. All complexes of exercises are to be fulfilled reading texts of the worked out by us verses. It facilitates pupils to better memorize sequence of exercises' fulfillment and gives emotional coloring to physical exercises.
Key words: first form pupils, technology, asanas, stretching, relaxation, physical qualities.

Introduction

In opinion of specialists in physical education junior school age is the most favorable for development of practically all physical qualities age [4; 6; 10; 17]. However, modern researches point at weakening of physical fitness and health of children and youth in learning conditions [3; 6; 8; 9; 10]. Specialists stress on demand in searching new means of schoolchildren's physical education. It is connected with the fact that application of traditional means to day does not facilitate increase of children's and youth's physical fitness [4; 10; 17; 25].

Nowadays in the whole world fitness programs, based on Hatha yoga methods, are popular. For example, 8.7% of adult population practices different kinds of Yoga in the USA [25]. A number of publications proves effectiveness of physical rehabilitation programs, worked out on the base of Hatha yoga [5; 13; 15; 16; 18; 22; 23], programs of sportsmen's training [1; 5], and students' physical education [11; 12; 14; 20]. There are researches, which confirm positive influence of Yoga on human psychic sphere [11; 12; 19; 21; 24]. However, we did not find researches, devoted to effectiveness of programs, based on Hatha yoga, in physical education of primary school pupils. We assume that study of static and dynamic asanas' combinations, breathing exercises, relaxation and stretching impact positively influences on physical fitness of primary school pupils.

Purpose, tasks of the work, material and methods

The purpose of the research is to study influence of the worked out by us health related technology with application of Yoga-aerobic means [7] on development of physical qualities of primary school pupils.

The methods of he research: for solution of our tasks we used such methods of research as analysis of scientific literature, pedagogic testing, pedagogic experiment and methods of mathematical statistic. For determination of children's motor fitness we used isolated motor tests, oriented on definite motor quality. Testing program included tests from physical culture school program [4] and other commonly known tests [6].

The research was conducted on the base of municipal educational establishment "Shostkinska comprehensive school of I–III grades № 7 of Shostkinska municipal council, Sumskaya region" from September 2014 to June 2015 At the beginning of experiment we formed control and experimental groups. Experimental group (EG) consisted of 26 1 A form pupils (12 girls and 14 boys). Control group (CG) consisted of 1–Б form 28 pupils (16 girls and 12 boys). Mean age of experimental group girls – 6.7 years, control – 6.7 years. Mean age of experimental group boys was 6.5 years, control – 6.7 years. Pupils' parents gave permission for participation of their children in pedagogic experiment and for usage of the received experimental results.

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Results of the research

On the base of analysis of health condition [8] and pupils' physical fitness [9] we worked out heath related technology of junior schoolchildren's physical education with application of Yoga-aerobic means (static and dynamic asanas, balance exercises, breathing exercises, relaxation and stretching) [7]. Yoga aerobic means were used in curriculum and extra-curriculum forms: on physical culture lessons, during physical culture breaks, in pupils' independent trainings.

Physical culture lessons were conducted as per the following schema: in preparatory part of the lesson, after preliminary aerobic warming up – complexes of stretching exercises (4-5 minutes); at the beginning of main part – balance exercises (1-2 minutes); 10 minutes of work by academic plan "School of ball", "School of movements' culture" and so on; 7-8 minutes – "School of posture" with usage of worked out by us static and dynamic asanas of Yoga-aerobic. In final part 2 – 3 minutes are spent for breathing exercises and relaxation.

Besides, at every lesson, under control of supervisors pupils fulfilled one from four worked out by us physical culture breaks:

- for prophylaxis of posture disorders;
- for recreation of limbs' muscles;
- for regulation of mental state;
- for relief of children organism's fatigue.

When choosing the kind of physical culture break we considered the content of pupils' learning functioning at definite lesson. All complexes of exercises are to be fulfilled reading texts of the worked out by us verses. It facilitates pupils to better memorize sequence of exercises' fulfillment and gives emotional coloring to physical exercises.

At home pupils fulfilled independently and with parents the learned at classes exercises for prophylaxis of posture disorders and for stretching**.** Besides, during fulfillment home tasks or other work in sitting position (drawing, computer games, watching TV and etc) children were involved by parents in practicing of the worked out by us physical exercises' breaks.

Results of the researches showed that after conducted pedagogic experiment physical fitness indicators of girls (see table 1) and boys (see table 2) changed in both groups.

Table 1. Dynamic of girls' physical fitness indicators in experimental and control groups before and after experiment

Test exercises	Contingent	Before experiment			After experiment			t	p
		$\overline{X}$	S	V (%)	$\overline{X}$	S	V (%)		
30 meters' run (sec.)	EG, n=12	7,.7	1.0	13.7	6.9	1.0	15.0	4.483	<0.01
	CG, n=16	7.6	0.5	7.2	6.4	0.5	8.9	11.310	<0.01
Shuttle run 4×9m (sec.)	EG, n=12	15.0	1.3	8.8	13.7	0.9	6.7	5.928	<0.01
	CG, n=16	14.5	1.4	9.5	13.2	0.5	3.8	4.312	<0.01
Long jump from the spot (cm)	EG, n=12	91.6	19.6	21.4	110.2	14.1	12.8	6.536	<0.01
	CG, n=16	96.5	18.4	19.1	100.4	16.3	16.3	1.111	>0.05
Torso bending from sitting position (cm)	EG, n=12	3.1	2.2	72.5	7.5	4.4	59.5	5.443	<0.01
	CG, n=16	5.5	5.0	90.7	5.9	4.3	73.5	0.396	>0.05
Power endurance of back muscles (sec.)	EG, n=12	39.8	14.0	35.2	52.6	23.3	44.3	8.532	<0.01
	CG, n=16	36.7	16.5	45.0	32.7	11.4	34.8	1.775	>0.05
Power endurance of abdomen muscles (sec.)	EG, n=12	34.3	16.6	48.4	44.5	18.8	42.3	3.463	<0.01
	CG, n=16	29.3	15.7	53.5	29.5	14.5	49.3	0.091	>0.05
Test "Flamingo" (q-ty of attempts)	EG, n=12	14.4	8.7	60.8	5.9	6.1	102	3.644	<0.01
	CG, n=16	17.1	7.7	45.1	15	6.5	43.1	1.681	>0.05

Table 2. Dynamic of boys' physical fitness indicators in experimental and control groups before and after experiment

Test exercises	Contingent	Before experiment			After experiment			t	p
		$\overline{X}$	S	V (%)	$\overline{X}$	S	V (%)		
30 meters' run (sec.)	EG, n=14	7.4	0.7	9.1	6.4	0.6	9.9	4.698	<0.01
	CG, n=12	7.4	1.2	17.1	6.3	0.8	13.0	3.966	<0.01
Shuttle run 4×9m (sec.)	EG, n=14	15.0	1.5	10.1	13.2	1.0	8.0	4.970	<0.01
	CG, n=12	14.3	1.5	10.8	13.1	1.0	8.0	2.871	<0.05
Long jump from the spot (cm)	EG, n=14	98.2	10.7	10.9	114.8	8.7	7.5	6.583	<0.01
	CG, n=12	107.0	18.3	17.1	105.7	12.6	11.9	0.427	>0.05
Torso bending from sitting position (cm)	EG, n=14	1.1	3.6	336.4	4.9	4.5	92.3	3.838	<0.01
	CG, n=12	1.8	5.1	278.0	0.6	4.9	844.4	1.564	>0.05
Power endurance of back muscles (sec.)	EG, n=14	40.8	17.4	42.8	58.4	20.0	34.2	4.002	<0.01
	CG, n=12	41.0	15.4	37.6	42.6	18.0	42.3	0.784	>0.05
Power endurance of abdomen muscles (sec.)	EG, n=14	36.7	17.8	48.5	50.4	16.4	32.5	3.117	<0.01
	CG, n=12	42.9	10.6	24.6	47.1	15.0	31.8	2.209	<0.05
Test "Flamingo" (q-ty of attempts)	EG, n=14	18.1	7.9	43.6	6.8	3.3	49.1	7.868	<0.01
	CG, n=12	18.8	9.0	48.1	11.2	4.3	38.9	1.448	>0.05

After pedagogic experiment we registered statistically confident difference in all tested indicators of EG boys' and girls' physical fitness ($p<0.01$). Having generalized the data we found that the best improvement was in tests for flexibility (torso bending in sitting position): the girls' results improved 1.5 times; the boys' – nearly 3.5 times. Also indicators of static balance improved (test "Flamingo"). Their increment was 59% (girls) and 62.4% (boys). Besides, indicators of back muscles' power endurance improved: 43.1% (boys) and 32.1% (girls). Indicators of abdomen muscles' power endurance also improved: 29.7% (girls) and 37.3% (boys).

In CG statistically confident changes ($p < 0.01$) were only in indicators of 30 meters' run and "shuttle run" 4 x 9 m as well as in indicators of boys abdomen muscles' power endurance ($p<0.05$). In other indicators of CG physical fitness changes were not statistically confident ($p>0.05$). Some indicators were even lower than at the beginning of experiment: indicators of back muscles' power endurance worsened by10.9% (girls) and indicators of flexibility by 66.7% (boys).

At the same time increment of run quickness indicators (30 meters' run) was higher than in EG (girls' increment: EG – 10.4%, CG – 15.8%; boys' increment: EG – 13.5%, CG – 14.8%).

Discussion

For the first time research of influence of health related technology, worked out on the base of Yoga-aerobic means, on primary school pupils' physical qualities' development has been fulfilled. It has been found that after pedagogic experiment EG pupils had confident improvement of all tested indicators of physical fitness. The greatest influence of Yoga-aerobic means' application was on development of flexibility and static balance indicators. The received information correlates with data of other researchers [1; 20], who studied influence of Yoga exercises on students' physical qualities.

We have widened the range of fitness technologies' application in physical education of primary school pupils. The conducted research supplements the data of a number of authors about effectiveness of programs, created on the base of Hatha yoga means' application in physical education and rehabilitation of different strata of population [1; 5; 11–16; 18–24].

Conclusions

Implementation of health related technology, based on application of Yoga-aerobic means, in physical education of primary school pupils permitted to improve physical fitness of the pupils: flexibility, static balance, power endurance of back and abdomen muscles.

It has been found that used in health related technology complexes of Yoga-aerobic exercises directly influence not on all indicators of primary school pupils' physical fitness. We can affirm that these complexes of Yoga exercises can be widely used in process of physical education of children, who study at primary schools. It is confirmed by improvement of physical fitness indicators of experimental group pupils, comparing with control group.

Conflict of interests

The authors declare that there is no conflict of interests.

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2 × 2 ACHIEVEMENT GOALS PROFILES IN CHILEAN COMPETITIVE AND RECREATIONAL ATHLETES: A FIRST LOOK

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Abstract. *Purpose:* was to examine the 2 × 2 achievement goal profiles of Chilean young adults regularly participating in competitive and recreational sport. *Materials:* participants were 108 female and 132 males who were recruited from the Valparaiso and Viña del Mar areas of Chile. Participants completed a valid and reliable measure of the 2 × 2 achievement goals referenced to sport participation. *Results:* indicated that the entire sample significantly ($p < .05$) and very meaningfully (Hedges' g range 1.13 - 2.91) endorsed the mastery-approach goal more so than the other three achievement goals. Male participants significantly ($p < .05$) endorsed both approach goals and the mastery goal contrast more so than the female participants. These differences approached medium in meaningfulness (Hedges' g range .40 - .46). Significant differences did not exist between competitive and recreational athletes on any of the achievement goals or goal contrasts. Confirming the lack of significant differences were the computed small to negligible in magnitude effect sizes. *Conclusions:* the present data were a first look into profiling sport participants on the 2 × 2 achievement goals in Chile. Given this sample of Chilean participants endorsed the performance goals far less than found in the sport psychology 2 × 2 achievement goal literature, more research is needed before these results are generalized to Chilean sport participants. Future research must also examine the relationships of antecedents and consequences to the 2 × 2 achievement goals to advance sport psychology in Chile.
Keywords: approach, avoidance, achievement, goals, contrasts, athlete, sex differences.

Introduction

The majority of social-cognitive studies regarding sport motivation are related to achievement goal theory. Achievement goal theory studies have been conducted in the sport environment across the globe in countries such as France [1], Turkey [2], Spain [3], and USA [4]. Achievement goal theory focuses on two main goals that define the purpose of achievement driven behavior. These two goals are mastery, task or learning goals and performance, ego or win goals [5-7]. Goal orientations are distinguished by their reference of personal competence [5].

The mastery or task goal orientation defines competence and success in terms of task mastery and/or task improvement. Individuals endorsing a mastery orientation are focused on skill development, learning new skills, demonstrating mastery and working hard. The performance orientation, in contrast, defines competence and success in normative terms, for example, by winning or outperforming others. This dichotomous achievement goal model has been widely used in achievement contexts. For instance, Lochbaum and colleagues [8] have reported on 236 such studies using the dichotomous achievement goal framework in competitive sport contexts.

Elliot and colleagues [9-11] argued that goal orientation frameworks should be revised to include the distinction between approach and avoidance motivations because of conflicting results with the performance or ego goal relationships with achievement behaviors. An approach goal indicates a behavior that is initiated by a positive or desirable event or possibility. In contrast, an avoidance goal indicates a behavior which is initiated by a negative or undesirable event or possibility. Elliot and his colleagues [9-11] initially proposed a trichotomous achievement goal framework including the mastery goal and performance-approach and performance-avoidance goals. The performance-approach goal indicates a desire to attain normative competence in terms of doing better than others, whereas the performance-avoidance goal indicates a desire to avoid normative incompetence in terms of doing worse than others. The trichotomous goals framework continues to be examined in the sport and physical activity literature [12].

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Building upon the trichotomous framework, Elliot and McGregor [13] proposed four types of goals. Thus, a 2 × 2 achievement goal framework that is derived by combining mastery versus performance as one dimension and approach versus avoidance as the second dimension. The performance-approach and performance-avoidance goals are identical to those in the three-factor framework. The mastery-approach goal focuses on task-based or intrapersonal competence by striving to master a skill, whereas the mastery-avoidance goal avoids task-based or intrapersonal incompetence by striving to not perform a skill more poorly compared to a previous performance.

Meta-analytic research has demonstrated that Elliot's 2 × 2 achievement goals have been researched extensively in many countries in sport, exercise, and physical education contexts [14, 15]. The approach goals are very important as both are meaningfully related in experimental, prospective, and cross-sectional studies to performance in a variety of physical activity and sport situations [14]. In addition to the importance of both approach goals to performance, contrast scores (i.e. mastery-approach goal – mastery-avoidance goal; performance-approach goal – performance-avoidance goal) are also predictive of sport performance [4, 14]. Thus, measuring both approach and avoidance goals are of importance in sport psychology research especially when related to performance.

One clear omission to date is the lack of investigations in many sporting countries around the world with achievement goals. Based on Lochbaum and his colleagues' approach-avoidance achievement goal meta-analyses [14, 15] as well as his recent dichotomous achievement goal review [8], no achievement goal research appears to exist in the published literature with a Chilean sample. Hence, we examined the 2 × 2 achievement goal profiles in competitive and recreational Chilean sport participants in this study.

Purpose, materials and methods

The purpose of the research was to obtain preliminary information about the achievement goal motivational structure of Chilean athletes from Elliot's 2 × 2 framework. In achieve our purpose, 108 female and 132 male participants were recruited from the Valparaiso and Viña del Mar areas of Chile with an average age of 22.00 $\pm$ 3.29 (age range 18 – 38). Informed consent approved by Pontifical Catholic University of Chile was obtained from all of the participants. The research was carried out via an online survey link. Participants in both competitive (n = 132) and recreational (n = 89) sports were specifically recruited. The competitive sport participants (62 females; 70 males) were from a number of sports such as basketball, rugby, volleyball, soccer, gymnastics and tennis while the recreational participants (46 females; 43 males) were in recreational activities such as aerobic dance and yoga as well as in traditional sports such as soccer, Taekwondo, and swimming.

The 2 × 2 Achievement Goals Questionnaire for Sport translated in Spanish [3] was used in the present investigation to measure the 2 × 2 achievement goals (mastery-approach: "it is important to me to as well as I possibly can"; performance-approach: "it is important for me to do well as compared to others"; mastery-avoidance: "I worry that I may not do as well as I possibly can"; and performance-avoidance: "I just want to avoid being worse than others") at the dispositional level. The scale has three statements per achievement goal using a Likert type scale. This measure has demonstrated acceptable psychometric properties since its inception [16] as well as the Spanish version [3] used in this investigation. The questionnaire required participants to rate their agreement with each statement on a scale from 1 (*not at all true of me*) to 7 (*very true of me*). A higher score on any of the achievement goal subscales indicates a stronger orientation toward that achievement goal. Participants responded to the following statement, "When competing in sport, I…"

The achievement goal contrasts were calculated following past research in the sport context [4]. All goals were first standardized prior to the contrast calculation (performance contrast = $z$performance-approach – $z$performance-avoidance; mastery contrast = $z$mastery-approach – $z$mastery-avoidance. Using standardized scores gives all goals equal weight in the contrast calculation.

Results of the research

A number of analyses were carried out to examine the collected data. All data are found in Table 1-4. Table 1 contains the intercorrelations and descriptive data for the entire sample. Table 2 contains the results for the paired t-tests amongst the 2 × 2 achievement goals for the entire sample. Table 3 (competitive and recreational samples) and Table 4 (male and female samples) contain the descriptive data, univariate statistics, and effect size data for the two conducted multivariate analysis of variance (MANOVA) with sex and sport level as the independent variables in both analyses. For the first MANOVA, the 2 × 2 achievement goals were the dependent variables. For the second MANOVA, the two achievement goal contrasts were the dependent variables. Hedge's g and partial eta squared (η_p^2) were calculated and used to interpret the results in terms of meaningfulness. Cohen's [17] guidelines for effect sizes magnitudes were followed to interpret Hedge's g such that a g of .20 was consider small, .50 medium, and .80 large. In addition, η_p^2 was interpreted as .01 as small, .06 as moderate, and .14 as large [18].

As detailed in Table 1 and Table 2, the mastery-approach goal was the dominant goal. This goal was significantly ($p < .001$) and meaningfully larger than the other three goals with effect size values of 1.13, 1.78, and 2.91 for mean differences between the mastery-avoidance, performance-approach, and performance-avoidance goals, respectively.

Table 1. Correlations, means, standard deviations, and reliability coefficients for the entire sample

Variables	MAp	MAv	PAp	PAv	*M*	*SD*	Reliability
MAp	1.00	.26*	.20*	-.06	6.32	.82	.72
MAv		1.00	.29*	.33*	5.03	1.39	.68
PAp			1.00	.60*	3.86	1.77	.83
PAv				1.00	2.79	1.50	.71

Note. * $p \leq .001$; MAp = mastery-approach; MAv = mastery-avoidance; PAp = performance-approach; PAv = performance-avoidance.

The pattern of differences amongst the other goals was as follows. The mastery-avoidance goal was endorsed significantly and very meaningfully more than both performance-approach ($g = .73$) and performance-avoidance ($g = 1.54$) goals. The performance-approach goal was endorsed significantly and medium in meaningfulness ($g = .65$) more than the performance-avoidance goal. Except for the performance goal correlation, the goals were mostly independent. The scale had adequate reliability (Cronbach alpha range .68 - .83).

Table 2. Results for paired *t*-tests amongst the 2 × 2 achievement goals

Paired Differences						
			95% Confidence Intervals			
Comparison	*M*	*SD*	Lower	Upper	*t*	*p*
MAp – MAv	1.29	1.42	1.10	1.48	13.49	< .001
MAp – PAp	2.46	1.79	2.23	2.70	20.40	< .001
MAp – PAv	3.53	1.75	3.29	3.76	29.84	< .001
MAv – PAp	1.17	1.92	.92	1.43	9.07	< .001
MAv – PAv	2.23	1.67	2.01	2.46	19.82	< .001
PAp – PAv	1.06	1.47	.86	1.25	10.69	< .001

Note. MAp = mastery-approach; MAv = mastery-avoidance; PAp = performance-approach; PAv = performance-avoidance.

For the MANOVA with the 2 × 2 achievement goals as the dependent variables, the results revealed a significant and medium in meaningfulness multivariate effect for sex, Wilk's $\lambda = 0.91$; $F(4, 214) = 5.06$, $p < .01$, $\eta_p^2 = 09$. The multivariate effect for sport level (i.e. competitive or recreational) and the sex by sport level interaction were not significant (all sport level data found in Table 3).

Table 3. Means, standard deviations, univariate statistics, and effect size values for the sport level

	Sport Level						
	Competitive		Recreational		Univariate Statistics		ES
Variables	*M*	*SD*	*M*	*SD*	*F*	*p*	*g*
MAp	6.38	.80	6.24	.85	1.31	.25	.17
MAv	5.16	1.44	4.85	1.29	2.76	.09	.22
PAp	4.01	1.84	3.62	1.64	2.12	.14	.22
PAv	2.80	1.41	2.77	1.63	.02	.88	.02
MC	-.02	1.34	.03	1.00	.20	.65	-.09
PC	.08	.97	-.11	.73	2.18	.14	.21

Note. ES = effect size; MAp = mastery-approach; MAv = mastery-avoidance; PAp = performance-approach; PAv = performance-avoidance; MC = mastery contrast; PC = performance contrast

As found in Table 4, the follow-up univariate *F*-tests were significant for both approach goals. The difference between the males and females approached medium in meaningfulness (*g*'s = .46 and .40) for both approach goals. For the achievement goal contrast MANOVA (see Table 3 for competitive and recreational data and Table 4 for male and female data), the results revealed a significant and small to medium in meaningfulness multivariate effect only for sex, Wilk's $\lambda = 0.95$; $F(4, 216) = 5.35$, $p < .01$, $\eta_p^2 = 05$. As found in Table 4, the follow-up univariate *F*-test was significant for the mastery-approach goal contrast. The difference ($g = .45$) between the males and females on the mastery contrast approached medium in meaningfulness. Though not significantly different at the traditional level ($p < .05$), the effect size difference ($g = .33$) between the males and females on the performance contrast approached medium in meaningfulness.

Table 4. Descriptive data, univariate statistics, and effect size values for sex analyses

	Sex of Sample				MANOVA		
	Males		Females		Univariate Statistics		ES
Variables	*M*	*SD*	*M*	*SD*	*F*	*p*	*g*
MAp	6.50	.60	6.13	.97	11.41	<.01	.46
MAv	4.97	1.41	5.10	1.36	.146	.70	-.09
PAp	4.20	1.75	3.50	1.72	7.48	<.01	.40
PAv	2.87	1.52	2.70	1.48	1.15	.28	.11
MC	.26	1.13	-.28	1.24	9.54	<.01	.45
PC	.14	.87	-.15	.89	3.43	.06	.33

Note. ES = effect size; MAp = mastery-approach; MAv = mastery-avoidance; PAp = performance-approach; PAv = performance-avoidance; MC = mastery contrast; PC = performance contrast

Discussion

To date, no research has examined Chilean participants and the 2 × 2 achievement goals in sport. Hence, this descriptive study was unique and a step forward for sport psychology motivation research in Chile. A number of observations based on the results are warranted. First, the mean data are very different in magnitude when compared to published sport psychology data. For instance, the performance goal values are lower in the Chilean participants than American recreational sport participants [4, 19] and competitive athletes from a number of countries [1, 3, 20]. Interestingly, the current Chilean sample's performance-approach mean data are more in line with fitness based recreational participants across a number of American investigations [22-24] as well as a Spanish investigation [25].

When examined from an independent/interdependent culture framework as in past achievement goal research [26], the performance goals conceptually should have been endorsed to a greater extent in the present sample. The independent/interdependence framework states that interdependent or collectivist countries are more socially aware. Thus, performance or other based achievement goal orientations should be more prominent. Within the dichotomous achievement goal framework, there are data to support more interdependent cultures endorsing ego or other based achievement goals more so than independent cultures [8].

The next observation concerns the intercorrelations. For the most, the intercorrelations mirror Lochbaum and colleagues' findings nicely. Lochbaum and colleagues' [15] meta-analyses of the intercorrelations amongst the achievement goals was based on more than 12,000 participants. Only the performance-approach and performance-avoidance intercorrelation in the present investigation strayed a bit higher from the meta-analytic results. Even so, the performance goals are not too similar to be of concern in the current Chilean sample. Hence, the achievement goals are fairly independent constructs and supports future research moving ahead with confidence in Chilean samples.

Last, the pattern of data suggested that sex of sample and not competitive level is important in the present sample. Males endorsed the approach goals more so than the females. Though for the master-approach goal, both males and females strongly endorsed this goal with the mean value being close to the top of the scale range. Endorsing a mastery-approach goal is important as it is related to many adaptive achievement behaviors such as better sport performance [14]. These results are very different than reported by Lochbaum and his colleagues' meta-analyzed results for sex differences [15]. The meta-analyzed sex differences for each goal indicated no meaningful differences [15]. Hence, future research in Chile must explore whether the present results are simply an artifact or enduring differences between males and females in Chile.

Conclusions

1. Sport psychology research and applied services are valued across the globe. Expanding sport psychology research to Chile is an important first step in order to increase awareness and applied sport psychology services.
2. More research is needed to determine if the much lower than expected performance goal means are artifact. Compared to other samples, the present sample with competitive and recreational sport participants is more similar to recreational fitness based samples. Though all Chilean sport participants should benefit in achievement contexts from endorsing the mastery-approach goal, they may be missing out on the benefits of endorsing a performance-approach goal in the same achievement contexts.
3. Future research should seek to understand if previously and extensively researched antecedents [15] and outcomes [14] are related in Chilean sport and recreational participants. Understanding antecedent and outcome relationships will greatly enhance achievement motivation research in Chile.

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A COMPARATIVE ANALYSIS OF FLOW STATE IN BASKETBALL PERFORMANCE: A PSYCHOLOGICAL PROBE

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Abstract. *Purpose*: The present study was conducted to examine the flow state in basketball performance. *Materials*: The investigator had selected Forty Five (N=45) female basketball players of 19 to 25 years of age to act as subjects. They were divided into three groups; (i.e., N_1=15; District, N_2=15; State and N_3=15 National). The purposive sampling technique was used to select the subjects. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study. *Statistical Analyses*: To measure the level of dispositional flow state of the subjects, the flow state battery constructed by Jackson & Eklund (2004) was administered. One way Analysis of Variance (ANOVA) was employed to find out the intra-group differences. Where F values were found significant, LSD (Least Significant Difference) Post-hoc test was applied to find out the direction and degree of difference. For testing the hypotheses, the level of significance was set at 0.05. *Results & Conclusion*: The results revealed no significant differences were found among female basketball players on the sub-variables of Dispositional Flow Scale-2 i.e., Challenge Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on the Task at Hand, Sense of Control, Loss of Self-Consciousness, Time transformation and Autotelic experience.
Keywords: flow, dispositional, state, basketball, players.

Introduction

Understanding the psychological factors that accompany successful athletic performance is a high priority for applied sport psychology, with a major area of focus being mental links to optimal performance. To advance knowledge in this area, it is important to examine specific psychological constructs with theoretical relevance to optimal performance in order to understand what psychological processes might be contributing to quality of performance. The first and primary construct examined was flow. Flow is an optimal psychological state that occurs when there is a balance between perceived challenges and skills in an activity [3]. According to Jackson, [8] flow experience during exercise can lead to high enjoyment, which, in turn, appears to play an important role in exercise adherence [9, 10, 14]. To advance knowledge in this area, it is important to examine specific psychological constructs with theoretical relevance to optimal performance in order to understand what psychological processes might be contributing to quality of performance. Empirical research has substantiated this prediction [16]. Hence, an understanding of factors that promote flow states in exercise will inform the strategies of exercise practitioners who are interested in promoting enjoyment and adherence to exercise. Jackson and Eklund [18] developed and revised the dispositional flow scale (DFS-2) to assess athletes'experience of the nine flow characteristics. In addition, Kimiecik and Harris [13] suggested that flow leads to positive affective reactions, which they equate with enjoyment. Research has shown that each one of these dimension is part of the definition of flow [9, 10, 12]. Using in-depth interviews, Jackson [8], Sugiyama and Inomata [17], and Young [19] assessed athletes' responses regarding the importance of the nine dimensions of flow, as proposed by Csikszentmihalyi (1975). Sugiyama and Inomata [17] investigated the flow experience among semi-professional and university athletes, who were between 18 and 29 years of age, representing three sports, namely, track and field, skating, and swimming. The investigations on flow during sport performance have focused on three main research topics. Firstly, to refine the understanding of the flow construct, as proposed by Csikszentmihalyi [2,3] in a sport context, several studies have analysed qualitative results and their connection to flow dimensions [8, 17,19]. The findings of these studies will be presented concurrently to point out similarities or differences in the flow experience between groups of elite athletes from various sports [6, 7] college and university athletes Sugiyama & Inomata, [17] and elite tennis players Young [19]. Flow is generally viewed as a peak performance state, and there is some support for this assumption [11, 15]. It appears that attaining flow during exercise may promote intrinsic motivation, which, in turn, has been shown to enhance persistence in participation Ryan et al. [16]. Brewer et al. [1] noted that the effect of performance outcome on self-report assessments of psychological states could be compromised by methods of retrospective introspection. The athletes are asked about general experiences of the flow experience in a particular activity the athlete chooses. Another scale developed by the same authors is the flow state scale-2 (FSS-2), which assesses the flow state right after completing an activity. As a result, the present study was conducted to determine the significant difference between Flow State in basketball players with regards to dispositional Flow Scale-2.

Method and Procedure

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Sample: The investigators had selected Forty Five (N=45) female basketball players of 19 to 25 years of age to act as subjects. They were divided into three groups; (i.e., N_1=15; District, N_2=15; State and N_3=15 National). The purposive sampling technique was used to select the subjects. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study.
Instrument: To measure the level of Dispositional Flow State of the subjects, the Flow State Battery constructed by (Jackson & Eklund, 2004) was administered.
Statistical Analysis: One way Analysis of Variance (ANOVA) was employed to find out the intra-group differences. Where F values were found significant, LSD (Least Significant Difference) Post-hoc test was applied to find out the direction and degree of difference. For testing the hypotheses, the level of significance was set at 0.05.

Results. Discussion

Table 1. *Significant differences in the results among Female Basketball Players with regard to dispositional Flow Scale-2 on the sub-Variable Challenge skill balance.*

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)
Between Groups	32.933	2	16.467	1.089	.346
Within Groups	635.067	42	15.121		
Total	668.000	44			

*Significant at 0.05

It can be seen from table-1 that insignificant differences were found with regard to the sub-variable Challenge Skill Balance among District, State and National female basketball players as the P-value (Sig.) .346 was found higher than the 0.05 level of significance (p>0.05).

Table 2. Significant differences in the results among Female Basketball Players with regard to Dispositional Flow Scale-2 on the sub-Variable Action-Awareness Merging.

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)
Between Groups	22.711	2	11.356	.707	.499
Within Groups	674.533	42	16.060		
Total	697.244	44			

*Significant at 0.05

It can be seen from table-2 that insignificant differences were found with regard to the sub-variable Action-Awareness Merging among District, State and National female basketball players as the P-value (Sig.) .499 was found higher than the 0.05 level of significance (p>0.05).

Table 3. Significant differences in the results among Female Basketball Players with regard to Dispositional Flow Scale-2 on the sub-Variable Clear Goals.

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)
Between Groups	16.044	2	8.022	.282	.756
Within Groups	1194.267	42	28.435		
Total	1210.311	44			

*Significant at 0.05

It can be seen from table-3 that insignificant differences were found with regard to the sub-variable Clear Goals among District, State and National female basketball players as the P-value (Sig.) .756 was found higher than the 0.05 level of significance (p>0.05).

Table 4. Significant differences in the results among Female Basketball Players with regard to Dispositional Flow Scale-2 on the sub-Variable Unambiguous Feedback.

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)

Between Groups	5.644	2	2.822	.208	.813
Within Groups	569.333	42	13.556		
Total	574.978	44			

*Significant at 0.05

It can be seen from table-4 that insignificant differences were found with regard to the sub-variable Unambiguous Feedback among District, State and National female basketball players as the P-value (Sig.) .813 was found higher than the 0.05 level of significance (p>0.05).

Table 5. Significant differences in the results among Female Basketball Players with regard to Dispositional Flow Scale-2 on the sub-Variable Concentration on the Task at Hand.

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)
Between Groups	41.378	2	20.689	1.952	.155
Within Groups	445.200	42	10.600		
Total	486.578	44			

*Significant at 0.05

It can be seen from table-5 that insignificant differences were found with regard to the sub-variable Concentration on the Task at Hand among District, State and National female basketball players as the P-value (Sig.) .155 was found higher than the 0.05 level of significance (p>0.05).

Table 6. Significant differences in the results among Female Basketball Players with regard to Dispositional Flow Scale-2 on the sub-Variable Sense of Control.

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)
Between Groups	13.911	2	6.956	.456	.637
Within Groups	641.333	42	15.270		
Total	655.244	44			

*Significant at 0.05

It can be seen from table-6 that insignificant differences were found with regard to the sub-variable Sense of Control among District, State and National female basketball players as the P-value (Sig.) .637 was found higher than the 0.05 level of significance (p>0.05).

Table 7. Significant differences in the results among Female Basketball Players with regard to Dispositional Flow Scale-2 on the sub-Variable Loss of Self-Consciousness.

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)
Between Groups	58.533	2	29.267	1.439	.249
Within Groups	854.267	42	20.340		
Total	912.800	44			

*Significant at 0.05

It can be seen from table-7 that insignificant differences were found with regard to the sub-variable Loss of Self-Consciousness among District, State and National female basketball players as the P-value (Sig.) .249 was found higher than the 0.05 level of significance (p>0.05).

Table 8. Significant differences in the results among Female Basketball Players with regard to *Dispositional Flow Scale-2 on the sub-Variable Transformation of Time.*

Source of Variation	**Sum of Squares**	**Degree of Freedom**	**Mean Square**	**F-value**	**P-value (Sig.)**
Between Groups	164.311	2	82.156	6.600	.133
Within Groups	522.800	42	12.448		
Total	687.111	44			

*Significant at 0.05

It can be seen from table-8 that insignificant differences were found with regard to the sub-variable Transformation of Time among District, State and National female basketball players as the P-value (Sig.) .133 was found higher than the 0.05 level of significance (p>0.05).

Table 9. Significant differences in the results among Female Basketball Players with regard to Dispositional Flow Scale-2 on the sub-Variable Autotelic Experience.

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)
Between Groups	141.911	2	70.956	3.225	.050
Within Groups	924.000	42	22.000		
Total	1065.911	44			

*Significant at 0.05

It can be seen from table-9 that insignificant differences were found with regard to the sub-variable Autotelic Experience among District, State and National female basketball players as the P-value (Sig.) .050 was found higher than the 0.05 level of significance (p>0.05).

Table 10. Significant differences in the results among Female Basketball Players with regard to Dispositional Flow Scale-2**.**

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	F-value	P-value (Sig.)
Between Groups	5.911	2	2.956	.012	.988
Within Groups	10408.667	42	247.825		
Total	10414.578	44			

*Significant at 0.05

It can be seen from table-10 that insignificant differences were found with regard to the variable Dispositional Flow Scale-2 among District, State and National female basketball players as the P-value (Sig.) .988 was found higher than the 0.05 level of significance (p>0.05).

Conclusion

Summarizing from the above findings we can say that no significant differences were found among female basketball players on the sub-variables of Dispositional Flow Scale-2 i.e., Challenge skill balance, Action-awareness merging, Clear goals, Unambiguous feedback, Concentration on the task at hand, Sense of control, Loss of self-consciousness, Time transformation and Autotelic experience.

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PRIMARY TEACHERS KNOWLEDGE ABOUT PSYCHOMOTOR DISTURBANCES OCCURING IN CHILDREN

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University School of Physical Education in Wrocław

Abstract. *Objective:* An attempt to determine the level of knowledge of teachers in the symptoms, diagnosis and treatment of psychomotor disorders of schoolchildren. *Materials and methods:* 174 teachers of physical education and integrated education in primary schools were tested. The study used questionnaire technique. *Results:* As the most common disorders in the population of school-age children surveyed teachers list ADHD (30%) and dyslexia (30%). Only 34% of respondents correctly determined epidemiology of psychomotor disorders and listed their symptoms. Over 80% of respondents claimed that they had never worked with children exhibiting psychomotor disorders. The majority of respondents (98%) did not participate in training on working with children with developmental disabilities. *Results:* The state of knowledge of psychomotor disorders of the surveyed teachers is low. Teachers have difficulty not only in defining the epidemiology of various disorders but also in correct definition of symptoms full spectrum.
Key words: psychomotor distorders, teacher, diagnosis, symptoms

Introduction

Modern education is currently going through a lot of transformations. One area, subjected to intense change, is work of school with pupils showing all kinds of disorders (Firkowska-Mankiewicz, 2004). With adoption of inclusive education model each student, both healthy and having developmental disabilities should have created optimal opportunities to learn and participate in school life for themselves (Richy, 2000, Zacharuk, 2011). Development difficulties of children should not isolate them from social relations, and should force the teachers and other employees to change organization and implementation of learning process, so that these students could successfully participate in them (Guidelinesfor Inclusion, 2005).

The process of inclusive education's implementation in Poland comes slowly from the plane of concept to the level of implementation, as evidenced by the fact that in many cities inclusive schools already exist. Their number, however, is still not sufficient to fully enable the inclusion of all students with developmental disabilities. To implement such changes the knowledge of teachers in the different types of disorders that could affect students is essential (Gruszczyk-Kolczyńska, Zeilińska, 2011). This knowledge should be extensive and very specific, and must not be limited only by memorizing of terminology issues. Teacher should identify specific and non-specific symptoms of disorders, know the pathological mechanisms of their formation and all possible forms of therapy, effective for specific dysfunction. His knowledge should be broad enough so that he could create optimal conditions for each of his student's work, and also knew how to establish effective cooperation with their parents (Dykcik, 2010).

Mastering this knowledge, however, is difficult and does not take place only in the course of preparation for the teaching profession. Most often it extends to all years of professional education. Only the knowledge gained through specialized courses and training supported by experience allows the teacher to implement fully the demands of inclusive education. Regardless of the teacher's seniority, and level of implementation of the facility in the principle of inclusion, every teacher is required today to have an elementary knowledge in subject of the child's development.

The aim of this study was to determine the level of knowledge of teachers in the symptoms, diagnosis and treatment of disorders of psychomotor schoolchildren. By specifying this state, the degree of implementation of model of inclusion in Polish schools will be simultaneously analyzed.

Materials and methods

To conduct the study survey technique was used. The questionnaire contained 19 questions related to psychomotor disorders and actions taken in this area. The study was conducted in 2015 among teachers of physical education and integrated education of employees in 7 Primary Schools in Wroclaw and Olesnica. The study was attended by 174 people, including 81 women and 93 men.

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Results

The surveyed teachers have little knowledge of psychomotor disorders, despite the fact that this issue is currently very timely and occupies an important place in the psychological and pedagogical considerations regarding the functioning of children with developmental disabilities. More than 1/3 of respondents correctly identified the epidemiology of psychomotor disorders in school-age children. The same number of people gave an incorrect answer or was not able to answer this question at all.

As the most common disorders among children of school age, teachers enlisted ADHD (30%) and dyslexia (30%), other respondents were unable to name psychomotor disturbances typical for the population of school-age children. When asked about the general signs of psychomotor disorders can be observed in everyday behavior of children at school they found that all disorder symptoms can be seen in everyday school situations (45%), but unfortunately 27% of respondents said that it is difficult to say whether there is such a possibility.

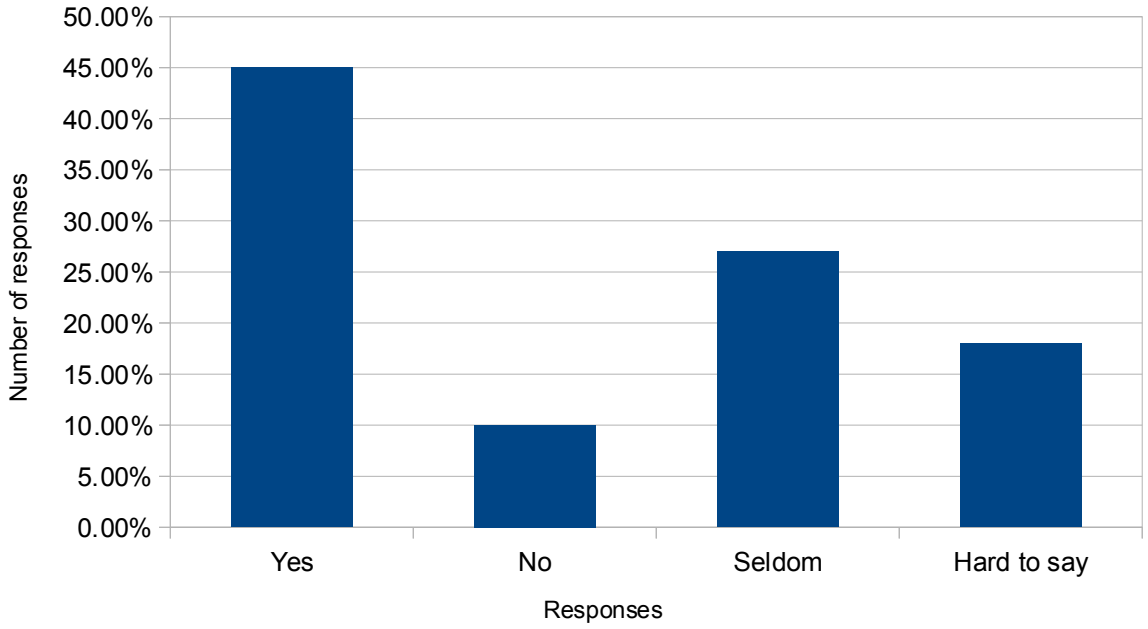

Figure 1. Ability to recognize the symptoms of psychomotor disorders in children in the school environment

Only 38% of respondents correctly identify the symptoms of nonspecific psychomotor disorders, the remaining group of teachers was not able to do so or point to incorrect answers.

The lack of basic knowledge of teachers in the children's psychomotor abnormalities revealed even more in the answers given by them specific questions regarding specific disorders. And so, according to 35% of respondents, the first symptoms of ADHD are not possible observe until about 6 years of age, while 33% of teachers do not know at what point in a child's life such symptoms can be observed.

Half of the respondents identified that ADHD is a disorder occurring with the same frequency in boys and girls. The same percentage of teachers also does not connect symptoms of ADHD with problems in the child's learning. For this group of respondents, irregularities in small and large motor activity are not specific for the described disorder. As specific for ADHD, teachers listed only the child's difficulties in attention and impulsivity. The question of whether ADHD disorder can disappear with age was met with very diverse responses.

Another issue examined was the knowledge of teachers about the signs of dyslexia, the diagnosis and treatment. The very definition of what is dyslexia, respondents accounted for a significant difficulty. Each of the proposed definition found the same number of supporters.

Nearly a quarter of the teachers surveyed also had trouble identifying the symptoms of dyslexia limiting them only to difficulty in reading and bad handwriting. Only for 30% of respondents the symptoms of the disorder manifest in both the large and small motor activity, and reading and writing skills of children. The remaining group of respondents (45%) identified the symptoms of dyslexia incorrectly, or not taken the task at all.

Over 80% of teachers said they had never worked with children with psychomotor disorders. The majority of respondents (98%) also did not participate in courses and training on working with children showing growth problems. In addition, what appears to be a consequence of the observed state of knowledge and experience of the subjects, none of the teachers take diagnostic or supporting actions for children with disharmonious development. This means that for a significant group of people psychomotor disturbances are not possible to observe the behavior of the child at school. As a result, this group of teachers also will not be able to help children who can be actually diagnosed with the described disorders.

Nevertheless, the fact that 72% of respondents showed interest in forms of training in diagnosing children for psychomotor disturbances is optimistic.

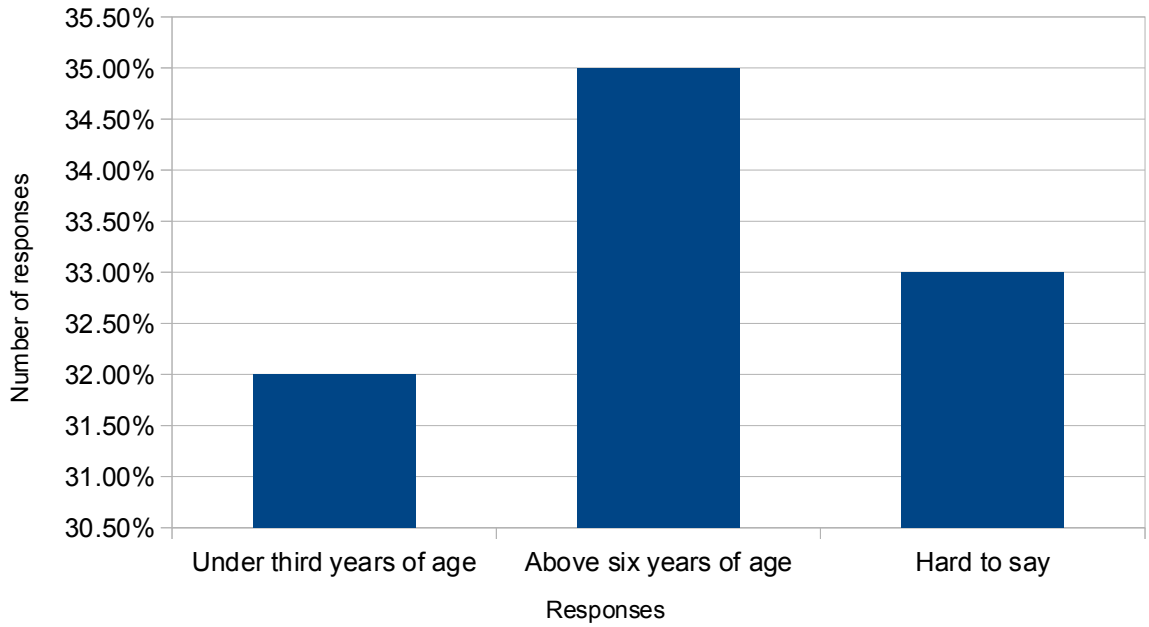

Figure 2. The possibility of early recognition of symptoms of ADHD

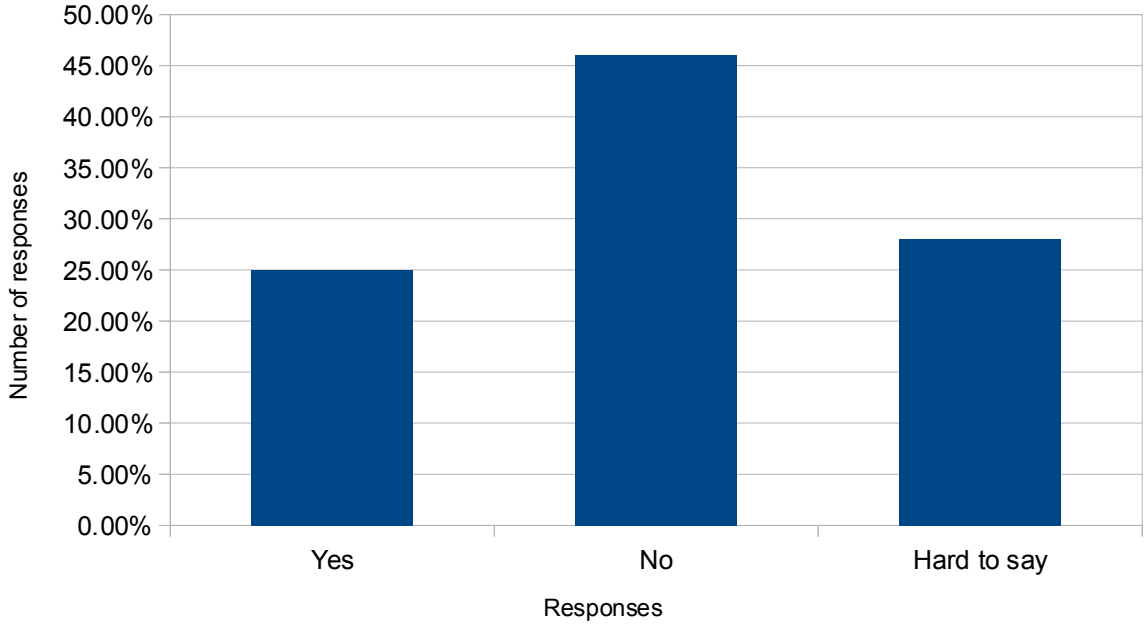

Figure 3. Disappearance of ADHD symptoms with the age of the child

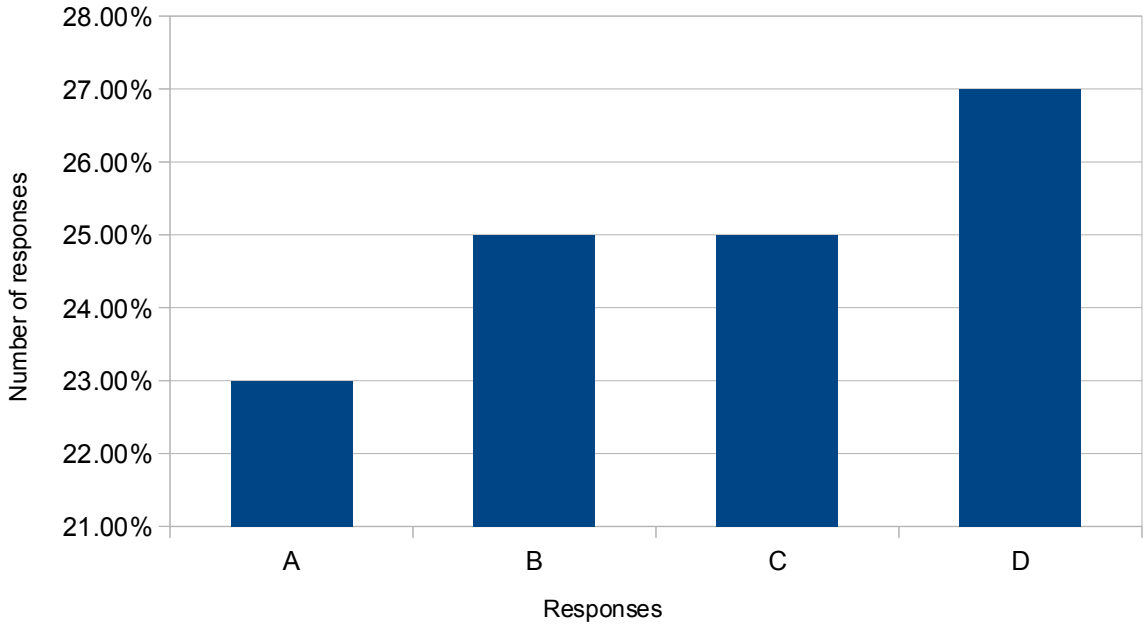

Figure 4. The definition of dyslexia
A: *Dyslexia is a specific difficulty in reading and writing of children with normal intellectual development*
B: *Dyslexia is a specific difficulty in reading and writing and abnormalities of small and large motor activity of children and the abnormal intellectual development*
C: *Dyslexia is a specific difficulty in reading and writing and abnormalities of small and large motor activity of children with normal intellectual development*
D: *It's hard to say*

Discussion

According to American Psychiatric Association, since 2012 as many as 10-15% of school children have showed psychomotor disturbances (APA, 2012). Considering the fact that average quantity of pupils in class is 25-30, it can be concluded that statistically 2-3 children in each class have abnormal development. The declaration of majority of surveyed teachers, which suggests they never had to deal with such children, can mean that they do not recognize the symptoms of disorders among their students. Problems with identifying the specificities of each psychomotor disorder are further supported by the limited scope of knowledge respondents. Identifying them only with predominant symptoms can lead to an inaccurate assessment of the child's behavior, in which symptoms manifest themselves more complex or generalized (Zimmer, 2010). These children are thus less likely to receive optimal support and assistance from the school, and often because of this experience school failure in later grades (Blythe 2015, Kruk 2013). Only 30% of teachers actually defines the various disorders and describes their symptoms, so it has a chance to promote the development of their students.

In the face of such results, Schoemaker's and Wilson's postulate, which suggests teachers should diagnose children's development, is difficult to implement. Since they are spending a lot of time with them in school, they have good ability to recognize abnormalities in the child's development (Schoemaker, 2015). Knowing how to interpret the child's behavior to better understand them, and thus stimulate their development properly, which in inclusive education is key to the process of bringing up a child with different needs (Kutscher, 2007, Majewska, Majewski, 2012, Richy, 2000). The results suggest, however, that none of the teachers did not carry out a diagnosis of psychomotor development in their wards.

However, the surveyed teachers feel the desire to acquire knowledge in the recognition and diagnosis of psychomotor disorders in children, which could be a turning point for the implementation of inclusive education in Polish schools.

Conclusions

Level of knowledge of psychomotor disorders of the surveyed teachers is small. Teachers have problems not only with diagnosing the epidemiology of various disorders but also with the proper definition and the definition of the spectrum of symptoms. Training of teachers in this direction is necessary for the implementation of inclusive education model, and their willingness promises the desired changes.

Declaration of Conflicting Interests

The authors declare, that there are no potential conflicts of interest in respect to research, authorship, and/or publication of this article.

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