

PHYSICAL CULTURE IN LIFE OF EASTERN-EUROPEAN REGION STUDENTS: MODERN STATE AND PROSPECTS OF DEVELOPMENT

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Abstract. *Purpose:* analysis of researches on physical culture problems among students in countries of Eastern-European region (2013–2015). *Material:* As sources of information we chose data base of Russia, Poland and Ukraine. Besides, we used sites of the most known journals of Eastern-European region. When choosing journals we based on rating of Russia (RISC), Poland (Index Copernicus) and Ukraine (bibliometryka of Ukrainian science) data bases. *Results:* thematic focus of researches on different physical education, sports and students health aspects was determined. The promising directions of researches are as follows: re-organization of system of students' physical education; interconnection of life quality and organism's resistance to environmental impacts; dependence of students' motor functioning on bad habits' presence; determination of factors, facilitating motivation for sport games in system of students' health related trainings; perceiving of life quality by disabled students; competence and professional skillfulness of specialists in physical culture and sports. *Conclusions:* it is recommended to use new, attractive forms of students' motor functioning. It is necessary to regulate students' motor functioning, considering motivation for success and for avoiding failures as well as to increase students' psycho-physiological stresses' resistance and to form students' culture of health.

Key words: student, health, physical culture, motivation, physical education.

Introduction

Practical realization of different scientific projects is important direction of physical culture and sports development in educational establishments. Some of such projects are implemented with governmental financial support. But main part of the projects is realized as initiative of educational establishments' teachers. All these, taken together, create certain scientific-research medium, which facilitates progress of physical culture – sports activity in educational establishments. Searching of ways to improve students' health, development of some kinds of sports, creation of favorable conditions for formation of youth's positive attitude to healthy life style, training of professional-applied skills of future specialists and other can be considered to be the main purpose of such researches. Demand in such works is conditioned by negative tendencies to worsening of students' health. Such tendencies are characteristic for all countries of Eastern-European region. Even in more developed countries of the region (for example in Poland) there is observed the same trend to worsening of students' health. Alongside with it, the countries of this region have many common problems, which concern development of physical culture and sports in youth medium.

It is necessary to note that countries of Eastern-European region (Ukraine, Poland, Russia, Belarus and Moldova) have equal climatic and geographic conditions. More than half of Ukrainian and Belarus territory, northern-eastern part of Poland and western part of Russia are still polluted with radiation, resulted from the accident on nuclear power plant (Ukraine, Chernobyl, 1986). This accident's after-effects have being continued to negatively influence on youth's health that requires consolidation of these countries' scientific researches in this direction. It pre-determines demand in coordination of appropriate scientific researches of scientists of these countries. All these, taken together, mark out Eastern-European countries from other countries of Europe.

Sports' development in students' medium of these countries takes place in close regional frontier cooperation of universities, institutes and academies. Characteristic feature of this region is presence of physical education departments in structure of higher educational establishments (with staff from 5 to 70 workers): approximately 300 departments in Ukraine, Poland, Russia and a little less in Belarus and Moldova. These educational establishments have discipline "Physical education" in their curriculums. In most of educational establishments this discipline is compulsory (2-4 hours a week). Now there appears a trend to making this discipline an optional one (Poland, Ukraine, Moldova and partially in Russia and Belarus). Besides, distinctive peculiarity of this region's countries is practice to conduct physical education classes, depending on students' health and their division into three health groups:

- 1) Main health group (consists of students, having no health problems);
- 2) Preparatory health group (students with insignificant health disorders); Подготовительная группа (студенты с незначительными отклонениями в уровне здоровья);
- 3) Special health group, consisting of students with disorders of health. From this group, the group of therapeutic physical culture is formed for students with pathologies and disabled students.

The countries of Eastern-European region have approximately equal system of coaches and teachers' training. This training is mainly conducted at faculties (or institutes) of physical education of pedagogic universities (approximately 15 in every country) and in specialized educational establishments of physical culture profile (approximately 6 in every

country). The largest technical universities in these countries also deal with training of coaches, physical culture instructors and teachers (approximately 5 in every country). In sport competitions these educational establishments seriously compete with specialized physical culture educational establishments. Distinctive feature of this region's countries is two-step preparation of scientific staff: candidate of sciences (PhD) and doctor of sciences (PhD professor).

Finally, countries of Eastern-European region have the same problems in students' physical education, in protection and improvement of their health, development of sports, training of scientific staff and other. Increased radiation pollution forces the scientists of these countries to search solution of problem of students' health improvement and protection. Scientific researches in these directions often duplicate each other. It results in unjustified financial losses and ineffective researchers' work in this countries. It should be noted that in this region Russian language is used: to large extent in Russia, Belarus and Ukraine and to less extent in Poland. It permits for most of scientists to communicate and present their works in easy to understand for them language. In this region there appear positive tendencies to use English in scientific sphere of educational establishments. That is why demand in concentration and coordination of scientific results of Eastern-European scientists in solution of physical culture and sports problems in students' medium is evident.

Recent years researches, dealt with students' life quality and health, development of physical culture and sports in educational establishments, have been being oriented more on solution of applied tasks. Analysis of thematic focus of the researches witnesses about presence of same problems in countries of Eastern-European region in educational establishments' physical culture – sport functioning: Russia [51, 54, 55, 78, 82, 88, 100, 182 et al.); Ukraine (2–4, 86, 87, 103, 142–146, 152, 162, 189–191 и другие); Польша (65–67, 130, 147–149, 151, 157, 159–161 и другие); Belarus (50, 101, 111 et al.). It can be added with researches of scientists from neighboring countries: Lithuania (211). The authors researched wide circle of problems, which are characteristic for educational establishments of their countries and for all Eastern-European region. Most of information is concentrated in several data bases: Index Copernicus (Poland) RISC (Russia), National library of Ukraine (Ukraine). The other portion is elucidated in journals of these countries. Such distribution of information resources about scientific researches requires analysis of recent researches on physical culture and sports problems in students' medium. It will permit to mark out promising directions of these topics' development.

Purpose, tasks of the work, material and methods

The purpose of the work is analysis of researches on physical culture problems among students in countries of Eastern-European region (2013–2015).

As sources of information we chose data base of Russia, Poland and Ukraine. Besides, we used sites of the most known journals of Eastern-European region.

Results of the researches

The most interesting for analysis was journal “Physical education of students” (<http://www.sportedu.org.ua>), which is in the data base of Russia (RISC), Poland (Index Copernicus) and Ukraine (bibliometryka of Ukrainian science) (see tables 1,2,3). This journal to the largest extent presents researches' results, devoted to problems of students'; physical culture and sports. The journal takes leading positions by citation. In rating Index Copernicus the journal goes just after publications, which have impact factor.

Table 1. Rating of journals in RISC data base (Physical culture and sports; 64 journals in total) for 2014 by indicator SCIENCE INDEX (<http://elibrary.ru>)

№	Name of journal	Indicator
1.	Equine and horse riding	0,195
2.	Sports; economic, law, management	0,178
3.	Theory and Practice of Physical Culture	0,177
4.	Bulletin of sport science	0,133
5.	Physical culture: cultivation, education, training	0,132
6.	Physical Education of Students	0,127

Table 2. Rating of journals in Index Copernicus data base (Sciences about sports; in total 27 journals were indexed; other have no indices) for 2013 by indicator ICV (<http://www.indexcopernicus.com>)

№№	Journal	ISSN	Country	ICV 2013
1.	Archives of Budo	1643-8698	Poland	16.04
2.	Biology of Sport	0860-021X	Poland	13.74
3.	Physical Education of Students	2308-7250	Ukraine	7.60

Table 3. Rating of journals in data base “Bibliometryka of Ukrainian science” (TOP 200, all sciences) for 2010–2014 by indicator h5 (<http://nbuviap.gov.ua>)

Item number	Journal	Index h5
10	Theory and methodic of physical education	14
14	Physical Education of Students	13
23	Pedagogics, psychology, medical-biological problems of physical training and sports	11

The researches for 2013–2015 are presented by Ukrainian authors (70%) and by authors from other countries (30%). Thematic focus of the researches is presented by articles about different aspects of physical education, sports, and students’ health. Topics cover also adjacent areas: bio-mechanics, kinesiology, medicine, psychology, sociology, technology of sport equipment. Besides, topics include researches of effectiveness of trainings and sport selection, workability, health protection and other interdisciplinary directions (see fig. 1).

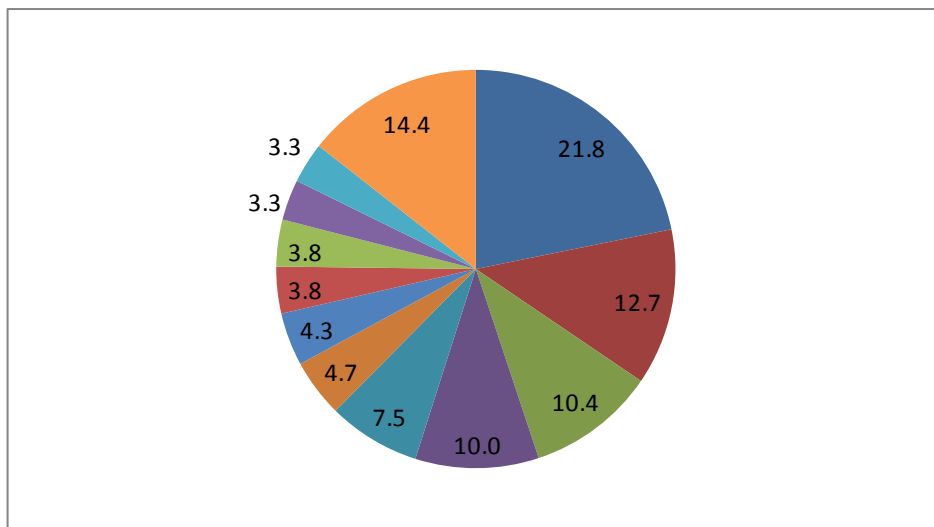


Fig.1. Topics of scientific researches of students’ physical culture and sports problems, %:
1–Health and life quality, 21.8%; 2–Physical education, 12.7%; 3–Sport games, 10.4%; 4–Martial arts, 10.0%; 5–Acrobatic, gymnastic, kinds of aerobics, 7.5%; 6–Power kinds of sports, 4.7%; 7–Biomechanics, 4.3%; 8–Psychological problems, 3.8%; 9–Water and winter kinds of sports, 3.8%; 10–Cadets’ training, 3.3%; 11–Teachers’ training, 3.3%; 12–The rest, 14.4%.

The highest quantity of researches is presented in direction “Health and life quality” (21.8%). Authors determined general and specific components of health: motor functioning [111, 114, 123, 197–199, 207, 208]; motivation [57, 64, 68]; morphological-functional state [29]; psychological state [69, 91]; self-assessment [28, 99, 112, 163, 118–121, 135] and etc. The authors render specific recommendations on increasing of health and life quality indicators [52, 53, 56, 58].

Among above listed works there are works, characterizing modern students:

- 1) Absolute majority of students have resilience indicators high or within norm [140];
- 2) Dynamic of students’ physical workability depends on period of student’s studying in university. During all academic week physical condition changes are typical for first and second year students. Concerning third year students, the curve of dynamic workability has descending character. In senior students it has ascending – descending character [156];
- 3) Alternation and equal correlation of motor elements and sport game elements increase general level of somatic health, cardio-vascular system’s functional state, self-feeling, activity and emotional state of students [82];
- 4) Possibility of students’ division into groups by indicators of functional shifts in extreme situations is shown. The most important indicators are quickness and accuracy of psycho-physiological tests passing with different modes of signal supply as well as functional shifts before fulfillment of exercise of extreme character [87].

Among other works we can mark out researches, oriented on increasing of life quality indicators [158, 165–170, 172].

The promising direction of further researches in this direction we can consider the works, which pay attention to the following:

- Changes in social-economic way of students’ life [148];
- Re-organization of students’ physical education system;
- Interconnection of life quality and organism’s resistance to external impacts [123];

– Interconnection of parameters of subjective life quality assessment and the factors of its formation depending on specialization; revelation of negative tendencies to reduction of students' life quality; dependence between motor functioning, positive attitude to own life quality and presence of bad habits, irrational eating, psychic overloads on students' organism [90];

– Application of new, attractive forms of physical functioning: sailing [160], rock-climbing [85, 164], hiking [34, 194]; cheer dance [155], cheer leading [108, 117], shaping [179], aerobic [15, 28, 186, 188], aqua fitness [139], sport and ballroom dances [134, 183]; some kinds of sport martial arts [13, 72, 111, 201].

In general structure of the researches "Physical education" took 12.7%.

Authors give recommendations on the following problems of students' physical education:

- 1) Motor functioning directly influences on students' educational progress and morbidity. Original technology of regulation of students' motor functioning on the base of control over their independent physical trainings is offered. It is recommended to practice independent training for not less than 15 minutes a day (in the morning, day and in the evening) with periodicity of not less than 3-4 times a week [55];
- 2) Motivation for physical culture practicing results from different demands: demand in motion, demand in fulfillment of student's obligations, demand in competition functioning. It is offered to use game and competition methods: setting of certain, feasible for a student, training tasks; usage of sufficient number of sport equipment of proper quality; urge of students to independent physical exercises through system of encouragement [39];
- 3) It is offered to use a system of specific forms of trainings' organization, which would meet humanistic principle "to urge but not to force". The function of such methods shall imply reconstruction of students' motivational sphere and adequately accepted by them purpose of functioning [78];
- 4) It was found that specially organized elective trainings on three disciplines (Pedagogic anthropology, Personality-oriented physical education, Creative valueology) formed sufficient volume of knowledge in undergraduate students. Some problems of innovative technologies' application in students' theoretical and practical trainings were outlined [17–19];

Among other researches we can note the following works: training of power abilities [171], pedagogic control of students' physical condition [11, 12], formation of personalities' physical culture of students [16, 131], individualization of physical education process [14], optimization of physical education [76, 77, 124–126, 129, 136], sport-oriented physical education [35, 133].

The promising direction of further researches in this direction we can consider the works, which pay attention to the following:

- Changes of students', having bad habits, functional indicators [141];
- Regulation of students' motor functioning, considering motivation for success and avoiding failures [49];
- Personality-oriented approach [18].

Direction of trainings "Sport games" took 10.4% in total structure of the researches.

Authors give recommendations on increasing of students' sportsmanship: basketball [27, 86, 150, 176, 180, 181]; baseball [6]; volleyball [36, 210]; handball [47]; tennis [43, 65, 83, 173]; football [1, 20, 59, 113, 200]; hockey [89]. The authors accentuate attention on consideration of peculiarities of different sides of students-sportsmen's training, considering specificities of educational environment in educational establishment, specific features of students' competitions (Universiades, students' leagues on kinds of sport games).

The authors render the following recommendations on students' sport games:

- 1) Analysis of basketball throws' accuracy, basketball players' logical thinking and depth of perception. It was found that ability to think logically and certain depth of perception were two main variables. These variables influence on deviations in basketball players' throw accuracy [176].
- 2) It was shown that the offered simulation methods permit to form optimal orientation of training process with application of specialized means at different stages of year cycle of volleyball players' training [36].
- 3) Analysis of different qualification female handball players' selection through interconnection of psycho-physical parameters showed that elite sportswomen are characterized by average and high degree of dependence of competition functioning successfulness on space perception indicators, on logical and space thinking [47].
- 4) The researches permitted to find the following correlation of rugby players' special physical training: September – special endurance is accentuated (100% of training time); October – special endurance (70%), power endurance (20%), training of strength (10%); November – accordingly 50, 30, 20%; December – 30, 40, 30% [137].

The promising direction of further researches in this direction we can consider the works, which pay attention to the following:

- Inviting of sportsmen to educational establishments;
- Mechanisms of educational establishment's interest in development of students' sports;
- Creation of conditions for combination of academic studies with trainings of sportsmen;
- Determination of factors, facilitating motivation for sport games in system of students' health related trainings

[59].

Among other researches we can note the works, devoted to practicing of sport games by disabled students [180]. It should be added with researches of problems of women football teams' training [60], students' involvement in refereeing of sport games' competitions [20,113].

Direction "Martial arts took 10 % in total structure of the researches.

The authors render the following recommendations on improvement of students' sportsmanship in the following kinds of martial arts: arm wrestling [142–146, 204], boxing [7, 73, 74, 114, 115], freestyle wrestling [25], Greco-Roman wrestling [195], Judo [66], Kick boxing [177], Thae quan do [67, 132], fencing [26, 105], other kinds [95–97].

The authors note that it is necessary to attract students to different kinds of martial arts and underline health related significance of sport martial arts.

Among the most interesting researches we would like to mark out solution of the following problems:

- 1) Working out of system of sportsmen's training individualization. In this case system is simulated as combination of elements and subsystems, which mutually, in controlled way, facilitate revelation, formation, development and perfection of personal martial art style [98].
- 2) It was found that hand dynamometry is an important and informative criterion, which determines arm wrestling training. Such criterion is characterized by maximal system-formation contribution [114].
- 3) It was shown that increase of sportsmanship reflects in rising of blows' density in duel. Innovations in competitions rules resulted in high intensity of combat actions in boxing. Attacking actions are fulfilled with rater higher quickness [115].
- 4) It was found that final part of competitions is the most informative for assessment of wrestlers' technical tactic abilities. It is determined by efficiency, effectiveness, quantity of attacks, technical arsenal. It was shown that wrestlers shall conduct duel at rapid rate. It is recommended to use movements, pulls, pushes as well as to make 1-2 actual attempts to fulfill definite technique [196].

The promising direction of further researches in this direction we can consider the works, which pay attention to the following:

- 1) Substantiation of approaches to development of future specialists' assertiveness by martial arts' means (sambo and judo). Means of sport martial arts are described as tools of personality's qualities training in future specialists. Potentials of assertiveness formation by martial arts' means are determined [72].
- 2) Analysis of different aspects of students' resistance to psycho-physiological stresses at martial arts trainings is presented. Specificity of individual psychologically-oriented methodology in modern system of martial arts is elucidated as well as its usage at physical education trainings. It is noted that the most destructive factors are excessive psychogenic stresses, caused by unfavorable psychological factors. Psychogenic stress influence in the most destructive way on health. It is the main reason of students' morbidity. Authors recommend didactically literally worked out methodic of prophylaxis [201].
- 3) Authors give analysis of cadets' endurance and workability rising by means of martial arts. As exercises for special endurance they recommend: throws of partner with high intensity; throws in average temp; training duels [8, 9].

"Acrobatic, gymnastic, different kinds of aerobics" took 7.5% [10, 84, 109, 110].

The authors give recommendations on the following problems:

- 1) Influence of health related aerobics on girls' motor fitness [175].
- 2) Dozing of physical loads at girl students' aerobic trainings [15].
- 3) Assessment of pedagogical HEEs girl students' communicative skills resulted from aerobic trainings [188].
- 4) Application of highly intensive training means at health related aerobic trainings [28].
- 5) Training of girl students' physical condition at extra curriculum cheer dance sessions [155].
- 6) Development of pedagogic college girl students' quickness and endurance under influence of cheer leading [117].
- 7) Interconnection of general and special physical fitness indicators of students cheer leaders at stage of specialized basic training [108].

The authors note high motivation of girls for health related trainings with dance exercises. Such authors' position is a **perspective direction** of organization of girl students' different motor functioning kinds.

Other researches are presented in the following directions:

- 1) Power kinds of sports (4.7%) [42, 102, 153, 154, 178, 185, 202, 203, 209];
- 2) Bio-mechanics (4.3%) [127, 128];
- 3) Psychological problems (3.8%) [21, 45, 46];
- 4) Water and winter kinds of sports (3.8%) [174];
- 5) Training of cadets (3.3%) [33, 44, 94];
- 6) Training of teacher (3.3%) [62, 63, 187];
- 7) Other researches (14.4%) [22, 24, 70, 71, 104, 106, 107, 116, 192, 193];

Among them researchers, devoted to protection and strengthening of students' health [29-32, 37, 48, 75, 122], and training of physical condition [79-81, 92, 93, 184, 205] can be marked out.

The promising directions in this case can be solution of the following problems with the help of modern means of health bio mechanical indicators' registration:

- 1) It was found that 63,3% with normal posture were in risk zone. Students with worsened posture's bio-geometric profile (scoliosis posture - 43,33%; round back- 23, 33%; slouching back- 22, 73%) got in the so-called pre-morbid state of muscular skeletal apparatus [38].
- 2) Quantitative indicators of bio-dynamic and coordination structure of motor qualities during aerobic training are determined. Bio-mechanical models are offered for control of motor fitness and prognostication of results [186].
- 3) It was found that there is objective demand in studying of bio-mechanical characteristics of free style wrestlers' technique. Such approach is required for further development of technology of athletes' sport technique formation at stage of initial basic training [206].

Ensuring of disabled students' life quality shall be considered to be **promising direction of researches**:

- 1) The researches proved that practicing of sports by disabled persons influence positively on their life quality. Research of aspect of life quality perception is a complex problem, but it deserves proper attention and appropriate efforts [23, 138].
- 2) Also organizational-methodic priorities of disabled students' physical education and sports were revealed. Application of physical education model permits their complete integration in students' medium. Students feel themselves more comfortable. They change their attitude to themselves. It is reflected in adequate perception, in finding certain masking of disability, in self presentation. The authors showed effectiveness of didactic technology of disabled students' physical education in pedagogic process [5].

Training of future teachers is not less important as well as their physical condition. In this aspect we can mark out the following problems:

- 1) Formation of future teacher's culture of health [61];
- 2) Emotional competence of future physical culture teachers [161];
- 3) Methodological requirements of competence approach in hiking education of future teachers [40, 41];
- 4) Competence and professional skillfulness of specialists in physical culture [182].

Discussion

Analysis of publications on problems of physical culture and sports in students' medium shows that most of scientists' recommendations remain out of higher educational teachers' and coaches' attention. There can be several reasons to this fact:

- 1) Level and quality of trainings of teachers themselves as well as their unwillingness to use modern technologies of students' health improvement in their practice.
- 2) Students' low motivation for physical culture and sports practicing in their every day life.
- 3) Insufficient material-technical provisioning of training sites as well as insufficient financing of physical culture and sports.
- 4) Students' overloading in week academic program. Transition from 36 hours' week to 30 hours' did not influence noticeably on students' activity.
- 5) Changes in higher educational establishments' curriculums, in which discipline "Physical culture" became an optional one.

The situation can be changed by proper organization of students' military patriotic education, application of more attractive physical functioning forms, usage of motivation approaches, implementation of encouragement and rating system in functioning of teachers and student.

It should be noted that it is necessary to use the above mentioned promising researches in scientific work of higher educational establishments. All these, taken together, will facilitate formation of teachers' positive attitude to their works and students' – to their health.

Conclusions

We can relate the following works to possible promising in the future researches:

- 1) Re-organization of students' physical education system.
- 2) New attractive forms of students' physical functioning.
- 3) Regulation of students' physical functioning, considering motivation for success and avoiding failures.
- 4) Inviting of students-sportsmen in educational establishments.
- 5) Mechanisms of educational establishments' interest in development of students' sports.
- 6) Creation of conditions for combination of academic classes with sport trainings for sportsmen.
- 7) Determination of factors, facilitating increasing of motivation for sport games in system of students' health related trainings.
- 8) Strengthening of students' resistance to psycho-physiological stresses.
- 9) Perception of life quality by disabled students.

10) Formation of student's culture of health.

11) Competence and professionalism of specialists in sphere of physical culture and sports.

Conflict of interests

The authors declare that there is no conflict of interests.

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