

University Sports and Recreation Activities System as a Factor of Ensuring the Students Health

Vladimir Nikolaevich Irhin, Irina Vitalievna Irhina and Igor Nikolaevich Nikulin

Belgorod State National Research University, Belgorod, Russia

Abstract: The article is connected with assessment results of students' health before the experiment and after it at Belgorod State National Research University. It is determined that before realization of sport and health-improving activities 30% of diagnosed students were at the health level of "below average", "low" health level-24%, "average"-39.12%, "high"-6% and at the level "above average"-0, 48%. The authors declare contradiction between high level of medical aid appealability and low physical activity taking into account good sports facilities at university. The components and the content of sport and health-improving activities system at the university are presented. It is shown that complex approach gives positive results in ensuring of students' health. After realization of developed system there weren't students with health level "below average", at "low" level were 18% of students, "medium"-49.5% and "high" level-22%, at level of "above average"-10.5%. The effectiveness of sport and health-improving activities at University depends on integration of academic and extracurricular educational activities, teachers' inclusion in it, supervisors of student groups and experts in the field of physical culture.

Key words: Sport and health-improving activities % System % University % Students' health % Physical health % Body mass index % Index Waist and hips % The test "being, activity, mood"

INTRODUCTION

The analysis of the Russian and foreign scientific literature shows that before the modern educational system sharply there is a problem of familiarizing the younger generation to the values of a healthy lifestyle [1-15]. In this direction, it is required to create the real conditions for realizing the students' mindset to preserve and promote the health (availability of material resources, enough time for leisure, its fullness with the emotional and physical health saving components: access to the sports facilities, etc.). In particular, the survey of students in the Belgorod State National Research University (NRU "BeISU") aimed at identifying the causes of lack of attention to their own health and physical culture, showed that for 45% is due to the lack of sports and recreation activities in the university; for 42% of the young men and women is due to the imperfection of the university program, which does not take into account the health status and students interests; for 37%-the problems with keeping the physical form are associated with lack of sports facilities next to the house [4]. Practice of higher

school shows, in the training courses (lectures, seminars), young men and women, as a rule, are in the immobilized state, in the educational process of the high school the interconnection of motor actions, emotional sphere and psycho-physiological processes are almost not taken into account [3]. The scientists are investigating various aspects of the problem under consideration: starting from the historical and pedagogical [10] and ending with the development of conceptual educational models [3], systems [4; 5], technology of classes with the health improvement and recreational orientation [6], programs for familiarizing children and young people to the physical training [8-15].

In the context of recent changes in the higher school the value of sports and recreation activities in the university as a factor for ensuring the future specialists health is increasingly aware. It is clear that such work should be comprehensive and systematic, permeating all forms of educational activity with the students, with involving the university teachers and curators and not just the university health service specialists.

MATERIALS AND METHODS

Assessment of the students' health state was carried out using a rapid method of G.L. Apanasenko and R.G. Naumenko [1]. Such parameters as height, weight, vital capacity (VC), arterial blood pressure (ABP), cardiac rate (CR) and muscle strength (carpal dynamometry) have been measured. Thus the level of somatic health (SH) was expressed in scores: 7-11 scores-was assessed as "medium", above 11 scores-as the lower limit of safe level. Depending on the SH level the students were distributed into 5 groups. To identify the metabolic syndrome of a body mass index (BMI) was determined by the following formula: $BMI = \text{weight in kg} / \text{height in m}^2$ (National cholesterol educational program, 2001) and the waist and hips measurement index (WM/HM), as the norm were accepted the BMI parameters within 18.5-24.9, WM / HM-at young men is not more than 0.95, at girls is not more than 0.85. The Ruffier tests, the modified Harvard step test [1] and the WAM test (wellbeing, activity and mood) were used [2]

Main Body: The survey conducted in 2009 by the National Research University "Belgorod State University" was attended by 495 university students [4]. The distribution of students according to the results of determining the level of physical health showed that the share of low indicator was 35.7%, lower than average-35.3%, average-25.2%, above the average-only 1.1% and the highest result has not been showed at all. The comparative analysis of subjective and objective assessments of students' health shows a significant difference. While 84.7% of the students subjectively consider themselves to be "almost" or "completely" healthy and 11.1%-not healthy, the real condition of their health is characterized by the inverse indicators: more than two-thirds have low rates of physical health, just quarter of them-the indicators with average meaning and there was not any student with high results. The high uptake of medical care, lack of physical activity in the presence of the university sports facilities, the prevalence of bad habits and overweight are generally not considered by students as the symptoms of illness or risk factors. The distribution of students according to the results of determining the level of physical health showed that the share of low indicator was 35.7%, lower than average-35.3%, average-25.2%, above the average-only 1.1% and the highest result has not been showed at all [5]. On the basis of the results of study it has been concluded that students have the high self-esteem of their health on the background of the low priority of health. In particular, it is

connected with the absence of a comprehensive system of university sports and recreation activities.

Therefore, in the context of the national priority projects "Education" and "Health" the National Research University "Belgorod State University" has developed and implemented the target program "Development of the health-oriented educational system of university", a significant place in which is devoted to the system of sports and recreation activities, including the purpose, content, forms and methods, tools of such activities and evaluation of the results. During the implementation of the target component we have solved the problems of designing activity programs in accordance with the principles of motivation, availability, variability, continuity and succession; concretized objectives and motives of the sports and recreation activities; implemented the development and adjustment of individual programs of activities with students.

The diagnostic stage of the implementation of developed system covered the determination of the students' health, their desire to do sports and recreation activities, identification of the limitations and contraindications to such activities, the selection of the experimental and control groups (including 495 students), etc. In the course of the program implementation we have solved the following objectives: the introduction of sports and recreation activities in the mode of fitness activities of students, provision of motivational support of such activities, the formation of skills of independent sports and recreation activity in students, solution of the problems for individual selection of tools and methods of activities considered in the day regimen.

In order to modify the university environment in the learning process have been introduced kinesiology and physical training exercises during the classes (lectures, seminars), between classes, gymnastics for eyes, allocated time to visit the swimming pool and sports halls of educational and sports complex named after S. Khorkina, have been regularly held sports events, days devoted to the health in the suburban health improving complex of the National Research University "Belgorod State University". The results of monitoring the students' health have been reflected in the "health passport". We have conducted sports and public events (competitions, festivals, Sports days etc.) in a planned way, including the sports and athletics among faculties, the sports and athletics among local associations of foreign students and the sports and athletics among dormitories. We have arranged the work of sports sections that involved not only students, but also lecturers, university staff, organized the training process and conducted

competitions on the basis of the sports year results: the best athlete, the best coach. During this period the activities of the University Sports Club has been markedly increased that included participation in the regional competitions, sports and recreation festivals, organization of social meetings, competitions with teams from other cities, etc. Given the low level of physical fitness of some students, the sports club established groups and sports sections with the health-improving orientation that cultivated aerobics, dance, sports and outdoor games, athletic gymnastics, etc.

The resource provision of the system of sports and recreation activities was aimed at the strengthening of material and technical base of the sports complex: the launch of new and additional areas, the purchase of sports equipment, exercise equipment, sports and training facilities, tools, costumes, etc. Currently, the sports and recreation infrastructure of the National Research University "Belgorod State University" includes the following: training and sports complex named after S. Khorkina, equestrian sports school, the health-improving camp in Titovka village with an adjacent natural landscape park "Nezhegol". Every year, on the basis of the nature park the ongoing days devoted to the health involved more than 20,000 students.

The activities aimed at maintaining the health of students and teachers through a clear and thoughtful planning were organically included into the daily lives of many thousands of people. Information provision of the system of sports and recreation work with students involved the use of complex tools to inform university staff on the issues of physical education and a healthy lifestyle: the presence of a special web-site, regular publications of sports columns in the university newspaper "Budni", the creation of promotional and informational videos, etc. In order to promote sports and recreation work, the student activists, representatives of the sports club, volunteers of healthy lifestyle conducted various campaigns against drugs, alcohol, smoking and other bad habits.

The assessment and analysis stage of the work determined the influence of the established system on the health of the subjects.

CONCLUSION

An analysis of the experimental results made in 2013 showed the positive influence of the established sports and recreation activities system on the subjective psychological states. After loading up to the pedagogical experiment the well-being indexes in the experimental

group have increased from 45.7 scores to 48.6 scores, at $p < 0.05$, whereas in the control group, this index has increased from 45.5 scores to 47.1 scores, at $p > 0.05$. The activity index in the experimental group after the class has increased from 45.1 scores to 48.2 scores, at $p < 0.05$, in the control group, this index has increased from 44.8 scores to 46 scores, at $p > 0.05$. The mood indexes after classes in the experimental group have increased from 44.9 scores to 48.7 scores, at $p < 0.05$, in the control group, this index has increased from 45.9 scores to 46.4 scores, at $p > 0.05$.

According to the test results after the pedagogical experiment the significant change of subjective indices in the experimental group was found compared with the control group, both before and after the class: the well-being after the classes in the experimental group has increased from 48.6 scores to 52.9 scores, the activity has increased from 48.2 scores to 53.7 scores; the mood has increased from 48.7 scores to 57.4 scores, at $p < 0.5$. The greatest change is noted in mood index (8.7 scores). During the experiment in the control group the negative changes of results for all WAM indices were found [2].

In the tests that determine the physical working capacity level on the results of the pedagogical experiment at young men of the experimental group compared with the young men of the control group, the statistically significant improvements of results in the Ruffier's sample and the modified Harvard step test, at $p < 0.05$ were fixed. In the test of life index, despite a significant increase of the result in the experimental group, the statistically significant differences with the control group were not found ($p > 0.05$):

- C in the test of life index in the experimental group after classes under the experimental technology the result was 56 s. u. (basic data 50.7 s. u.), at $p < 0.05$. In the control group was found no statistically significant results worsening. After the experiment, the test result was 51 s. u. (basic data 51.1 s. u.), at $p > 0.05$. The results of the experimental group after the pedagogical experiment have improved significantly and correspond to the upper assessment threshold "above average";
- C in the Ruffier's sample test in the experimental group after the pedagogical experiment the result was 8.1 s. u., the basic data-11.5 s. u. ($p < 0.05$). The results improving in the experimental group in this test The improved performance of the experimental group in this test from the "satisfactory" to "good" rating indicates an increase in the level of overall physical working capacity of young men. In the control group were fixed the negative changes from 11.4 s. u. to 10.5 s. u. at $p < 0.05$;

C the indices of the modified Harvard step test in the experimental group have changed from 21 s. u. to 24 s. u., ($p < 0,05$). The increase of test results in the experimental group from the "average" to "good" rating indicates the positive impact of test technology on the working capacity of the trial subjects. In the control group were fixed the negative changes from 21.5 s. u. to 20.9 s. u., at $p > 0.05$.

To ensure the motivational support to students and to provide the health-recreational direction of classes you shall comply with the following pedagogical conditions:

- C at drawing up the training complexes you shall take into account the wishes of trial subjects, including the inclusion or exclusion of "unloved" and anatomically inconvenient exercises;
- C to provide the variety of training process and to increase the interest of students, you shall make changes in the training facilities every 1-2 months, or change them completely;
- C to exclude the "to failure" method, not to apply the maximum loads (except for the control tests), as much as possible to exclude the exercises are distinguished by higher traumatic;
- C in the training process was used the principle of variability;
- C at the training classes you must create the favorable emotional background, including by means of musical accompaniment;
- C focus of classes on the their process, not on the final result;
- C selection of a convenient for the students pace during the exercises, but not consistent with the safety instructions, including the avoiding of fast pace for the exercise;
- C the CR value at loads shall be in the range of 140-180 bpm / min, which will contribute to a healing effect of exercises;
- C rest intervals between sets and repetitions shall be adjusted individually.

Findings:

C The scientific analysis shows that in the theory and practice of higher education the various means to ensure the students health are widely used. However, the integral system of sports and recreation activities, to preserve and strengthen the health of future specialists, has not received the sufficient scientific evidence.

C The sports and recreation activities system that ensures the students' health has been developed and implemented on the basis of the Belgorod State National Research University, which suggests a certain sequence of actions and includes a goal-setting, the diagnostic stage, the pilot program practical implementation stage and evaluating and analytical stage.

C The sports and recreation activities system with the students in the university has had a significant impact on the physical development data of future specialists, at a statistically accurate level of differences, $p < 0.05$. The obtained results show the positive impact of the experimental system on the physical parameters of the students' development. According to the data of the final power performance testing a significant positive result was recorded at: the pull-ups on the bar; hands extension at the ups while lying; rod benching, while lying on the horizontal bench; carpal dynamometry; squatting on one leg; body bending at students in the experimental group compared with the students in the control group at a statistically significant level of differences ($p < 0.05$).

C The positive impact of the sports and recreation activities system on the subjective indices of students involved in the experimental group compared with the control group, both before and after classes, was revealed. The indicator of well-being before classes in the experimental group has increased from 48.6 scores to 52.9 scores, the activity index has increased from 48.2 scores to 53.7 scores, mood index has increased from 48.7 scores to 57.4 scores at a statistically significant level of differences ($p < 0.5$). In the control group during the experiment, the negative dynamics of the results in all WAN parameters (wellbeing, activity, mood) was found.

C The motivation of students for the sporting and recreational classes was significantly higher than the level of motivation of students not included in the system.

C The sports and recreation activities system with students in the university has a positive impact on the physical capacity level of the trial subjects in the experimental group. At the Ruffier's sample test after the experiment the result was 8.1 s. u., the basic data in the experimental group was 11.5 s. u., at $p < 0,05$. The indices of a modified Harvard step test in the experimental group have changed from 21 s. u. to 24 s. u., at $p < 0,05$.

C The pedagogical conditions for the effectiveness of the sports and recreation activities system with students in the university are: involvement of students in the optimal motor activity, which is provided by a variety of means of physical culture;; the complex nature of the sports and recreation activities, which are cooperate the educational and extracurricular educational activities, in which the students, teachers, curators of student groups, experts in the field of physical culture are involved; creation of a positive emotional-employment background of the sporting and recreational classes, contributing to the accumulation of consecutive positive emotions among students due to the psychophysiological emancipation.

REFERENCES

1. Apanasenko, G.L. and R.G. Naumenko, 1986. Somatic health and maximal aerobic capacity of the individual. *Physical Education Theory and Practice*, 4: 29-31.
2. Doskin, V.A., N.A. Lavrent'eva, M.P. Miroshnikov and V.B. Sharai, 1973. Test of the differentiated self-feeling for the functional state. *Psychology Questions*, 6: 141-145.
3. Irkhin, V.N., 2006. Concept of the health saving pedagogic university system development: monograph. Belgorod: Publishing House: BelSU, pp: 128.
4. Irkhin, V.N., I.V. Irkhina and N.I. Zhernakova, 2009. Pedagogical system of the students' health preservation in the university: Monograph. Belgorod: Publishing House: BelSU, pp: 202.
5. Irkhin, V.N., I.V. Irkhina and T.V. Nikulina, 2010. Health-oriented educational system of the university: management technology: Monograph. Belgorod: PPC "Politerra", pp: 207.
6. Nikulin, I.N. and N.P. Gaponenko, 2007. On the technology development relevance for the students' Athletic gymnastics classes with the health improvement and recreational orientation. *Physical culture and Sport are the basis of a healthy lifestyle: articles of the IV Intern. Scientific-Practical Conf. dedicated to the 60th anniversary of the Institute of Physical Culture and Sports, Tambov State University named after Derzhavin*, pp: 29-31.
7. Bauman, A., F. Bull, T. Chey, C.L. Craig, B.E. Ainsworth, J.F. Sallis, H.R. Bowles, M. Hagstromer, M. Sjostrom and M. Pratt, 2009. The International Prevalence Study on Physical Activity: results from 20 countries. *International Journal of Behavioral Nutrition and Physical Activity*, 6: 21.
8. Beets, M.W., A. Beighle, H.E. Erwin and J.L. Huberty, 2009. After-School Program Impact on Physical Activity and Fitness: A Meta-Analysis. *American Journal of Preventive Medicine*, 36(6): 527-537.
9. Cicognani, E., C. Pirini, C. Keyes, M. Joshanloo, R. Rostami and M. Nosratabadi, 2008. Social Participation, Sense of Community and Social Well Being: A Study on American, Italian and Iranian University Students. *Social Indicators Research*, 89(1): 97-112.
10. Irhin, V.N. and I.V. Irhina, 2011. Genesis of health-oriented physical culture at schools of Russia (the end of the XIX century-the 80s of the XX century). *Sportlogia*, 7(2): 281-294.
11. Kilpatrick, M., E. Hebert and J. Bartholomew, 2005. College Students' Motivation for Physical Activity: Differentiating Men's and Women's Motives for Sport Participation and Exercise. *Journal of American College Health*, 54(2): 87-94.
12. Mourtidou, K., S. Goutza and D. Chatzopoulos, 2007. Physical education and moral development: An intervention program to promote moral reasoning through physical education in high school students. *European Physical Education Review*, 13: 41.
13. Sallis, J., H. Bowles, A. Bauman, B. Ainsworth, F. Bull, C. Craig and M. Sjostrom, 2009. Neighborhood Environments and Physical Activity Among Adults in 11 Countries. *American journal of preventive medicine*, 36(6): 484-490.
14. Petersa, D., G. Jonesa and J. Petersb, 2008. Preferred 'learning styles' in students studying sports related programmes in higher education in the United Kingdom. *Studies in Higher Education*, 33(2): 155-166.
15. Green, K., A. Smith and K. Robert, 2005. Young people and lifelong participation in sport and physical activity: a sociological perspective on contemporary physical education programs in England and Wales. *Leisure Studies*, 24(1): 27-43.