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Peculiarities of Forming Health-Preservation Competence of Bachelors and Masters of Pedagogics

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Abstract

The forming of healthy and safe lifestyle's culture is one of the most important tasks of modern pedagogics. In this aspect the development of teachers' health-forming and health-preservation competence is of particular importance. The aim of this work was to analyze the features of forming health-preservation competence at different levels of teachers' training. We have analyzed normative documents and the contents of the training curriculum for the bachelor of pedagogics (profile "Life Safety. Physical education") and for the master of Pedagogics (profile "Life Safety"). The students' physical health as the method of increasing health-preservation motivation was assessed. According to the Russian Federal state educational standards of higher education for bachelor's and master's degree programs, health-preservation competence belongs to the universal category "Self-organization and self-development". The mastering of academic disciplines contributes to the forming of future teachers' health-forming and health-preserving competences – the cognitive component of healthy and safe lifestyle culture. At the level of bachelors' training this problem should be solved, mainly through the general professional competencies' forming – the system of values and motivations of a healthy and safe lifestyle forming. At the master's level, more attention should be paid to the forming of special competencies that allow developing and implementing methods of forming of motivation for health in the educational process. The results of the work have practical value for the organizing of health-forming educational space in the University.

Key words: health; health-preservation competence; healthy and safe lifestyle.

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Introduction

Forming a culture of healthy and safe lifestyle is one of the most important tasks of modern pedagogy. In this aspect the development of health-forming and health-preservation teachers' competence is of particular importance. In accordance with E. A. Yugova (2011; P. 213-214), a university graduate should not only master general professional competencies, but also the basic skills of a healthy lifestyle (HLS), since the lack of health-saving thinking will not allow him to become a fully-fledged employee meeting the employers' requirements.

Health-preservation competence is an integrative personality characteristic from a set of valuesemantic orientations, health-preservation knowledge, skills and abilities, contributing to the forming of experience in effective health-preservation activities in situations of reality (Rybina, 2015). Thus the main task of the teacher is to make a detailed analysis of the health-preservation capabilities of the training discipline and training technologies, and to develop the tools that implement the function of healthpreservation on this basis (Rybina, 2015). The multicomponent structure of health-preservation competence is emphasized by many authors (Abakumova, 2016; Yugova, 2011; Rybina, 2015); in this connection in the Russian teachers' training system there are real difficulties of its forming.

Recently the distinction between the concepts of health-preserving and health-forming competence has been actively discussed. Many authors (Cherepov, 2015; Cherepov et al., 2017; Lubysheva & Cherepov, 2016; Yarushin, 2018) indicate metasubject and multicomponent structure of health-forming competence. Cognitive (knowledge in the field of HLS), operationally-activity (abilities and skills of forming and increasing the reserve abilities), motivational and value components (understanding the role health technologies in the forming and improvement of individual health) are in the structure of health-forming competence. It is "an integral part of the culture of each person" and "the most important condition for the individual socialization" (Yarushin, 2018; p. 104). E. A. Cherepov (2015, p. 295) justifies the need to build a health-forming educational space, which in contrast to the health-saving environment stimulates an increase in the students' adaptive capabilities by improving their health, increasing their health-forming competence, and successful adaptation and socialization in an educational organization.

According to Russian and foreign studies (Makeeva & Tihomirova, 2016; Savina et al., 2010; St Leger, 2001) future teachers demonstrate a low level of health-preservation competence, which, in turn, may later negatively affect the health of their future students (Moynihan et al., 2015). Many authors (Omelchenko & Zverkova, 2015) raise the question of tutorial support of forming the health-preservation competence of future teachers.

Taking into consideration everything said above, the aim of this work was to analyze the peculiarities of forming health-preservation competence at different levels of teachers' training – bachelors and masters.

Materials and methods of research

Research Methods

The comparative analysis of the Russian Federal State Educational Standards of Higher Professional Education (FSES of HPE, 2010, 2011) and Higher Education (FSES of HE, 2014, 2015; FSES of HE 3++, 2018b, 2018m) was done. The educational programs of training the Bachelor of Pedagogic ("Life Safety. Physical education" profile) and the Master of Pedagogic (profile "Life Safety") as well as working programs of the academic disciplines were analyzed. The experience of the work of the professors of the Department of Biomedical sciences of Vyatka State University (VyatSU) was generalized.

The assessment of physical health was carried out as a method of improving health-preservation motivation. We used the instant diagnosis of the health's safe level by G. L. Apanasenko (2006). This method involves the measurement of basic anthropometric (length and body weight) and functional parameters (vital capacity of lungs, muscle strength of the leading hand, blood pressure, heart rate, recovery time after 20 sit-ups) by standard methods and the subsequent calculation of indices of physical development (weight and height, vital and power indices) and the energy potential of the cardiovascular system at rest (Robinson index, or rate pressure product). Evaluation of the degree of adaptation of the circulatory system was performed on the calculations of the adaptive potential according to the formula of R.M. Bayevskiy (1989). The results were statistically processed using the Biostatistics 4.03 software package with the determination of the arithmetic mean (M), the arithmetic mean error (m), Student's t-test with Bonferroni adjustment for multiple comparisons with the reliability score by the significance criterion p (the differences between the feature groups were considered reliable for p <0.05).

Experimental research base

The experimental work was carried out at VyatSU. 92 second year students (64 girls and 24 boys, age 19.00±0.09 years) of the Linguistics and Pedagogics institutes of VyatSU took part in the research. The study was conducted in September-December 2018 in the natural conditions of the educational process.

Stages of research

The study was conducted in three stages. At the first, preparatory, stage, the present state of the problem under investigation was analyzed in pedagogical theory and practice; normative documents were analyzed; a program of research methodology was developed; the content of the academic disciplines of the training curriculums of Bachelors and Masters was determined.

At the second main stage, the rapid assessment of the physical health and adaptive potential of students was carried out.

The third and final stage included systematization, comprehension and generalization of the research results, clarification of theoretical conclusions, processing and documenting of the obtained research results.

Result

The Comparison of Competencies in Russian Federal Higher Education Standards

In the Russian Federal state educational standard of higher professional education of the Bachelor's training programs (2011) the health-preservation competence was in different groups:

1) the general cultural competences (the student is ready to use methods of physical education and self-education to improve the adaptive reserves of the body and strengthen health);

2) the professional competences (the student is ready to ensure the protection of life and health of students in the educational process and extracurricular activities);

3) special competences (the student has skills to the method of forming a HLS, preservation and strengthening of health of schoolchildren; the student has skills to the methods of health-preservation technologies (HPT), skills of preservation and strengthening of health of schoolchildren).

The wordings of these competencies in the Russian FSES HE (2015) were significantly reduced, in particular, the general cultural competence (the student is ready to maintain a level of physical training that provides a full-fledged activity) and the general professional competence (the student is ready to

ensure the protection of life and health of schoolchildren).

The above-mentioned competence in the FSES HE 3++ (2018b) transferred to the rank of universal to the categories of "self-education and self-development" and "the safety of life". However, the wordings are constructed in such a way that they do not imply either a person's motivation to maintain HLS or the active participation of the teacher in the creating of a health-preservation environment.

The Russian FSES HPE (2010) and FSES HE of the Master's training programs (2014) do not contain clear wording of the health-preservation competencies. However, it is possible to assume their presence in the group of professional competencies (the student is able to apply modern techniques and technologies of organization and implementation of the educational process at various educational levels in various educational institutions; the student is able to apply modern techniques and technologies of educational activities, diagnosis and evaluation of the quality of the educational process in various educational programs). But for the profile of training "Life Safety" among the special competencies we can find the required "knowledge of methods of HPT, skills of preserving and strengthening the health of schoolchildren, methods and techniques of providing pre-hospital care."

Finally, in the FSES HE 3++ (2018m) the health-preservation competence is in the category of universal with the wording "is able to determine and implement priorities of their own activities and ways to improve it on the basis of self-assessment." We agree with the developers regarding self-organization and self-development, but what does this wording have to do with health-preservation?

Forming of the Health-Preservation Competence at Different Levels of Teachers' Training

The formation of health-saving competence of future Bachelors of Pedagogics takes place in the process of development of such disciplines as "Education of health culture of a schoolboy in life safety training", "Age anatomy, physiology and hygiene", "Fundamentals of medical knowledge and HLS", "Fundamentals of addiction prevention in life safety training", "Children's health protection" etc. Masters have the same goal is the development of academic disciplines "HPT in education", "Rational life support", "Modern educational technologies in life safety training", etc.

At the same time, students replenish their knowledge and skills in health care, studying the theoretical foundations of health culture, prevention of addictions, methodology of preservation and strengthening of somatic and mental health, etc. Practical skills, for example, first aid in respiratory failure, are formed in an active form when practicing actions with simulators and robotic simulators in accordance with the instructions and guidelines under the supervision of the teacher and independently, as well as interactively – in solving situational problems, demonstrating and analyzing the elements of the lesson, etc. Taking into account the fact that that classroom studies make up less than 50% of the total labor intensity, many questions are for independent study. The workbook and the study guide including theoretical foundations, methods of conducting laboratory work, test questions and situational tasks for preparation for control activities, and questions for the credit-test were developed to organize classroom activities and independent out-of-class work of students.

One of the forms of students' group work organization in the formation of first aid skills is working in small groups (the situational role play-exercise method). This method allows us to create specific skills to provide first aid to the injured, to remove the psychological barrier to the problem, to develop communication skills and the ability to adapt quickly to the situation. It is important that each student should do exercises and he himself should analyze its effectiveness.

In order to assess the level of forming of health-preservation competence, various forms and

methods of control are used (oral survey, control work, solving a situation problem, making recommendations, etc.). As practice has shown, a particular difficulty for both future Bachelor's and Master's students are tasks in which you want to find mistakes and correct them. This indicates the reproductive level of thinking of the majority of students, stereotypical acquired skills and inability to

The forming of health's motivations

apply them in an unusual situation.

Priority, and probably the most difficult, is the forming of health's motivations (Rybina, 2015) and the introduction of HPT in educational process. One of the ways to motivate teachers to use the HPT in educational process is the organization and holding of the regional competition "School of healthy lifestyle". The annual competition of educational institutions of the Kirov region is held by the Kirov region Public Chamber in order to improve the health-preservation and health-forming activities of educational institutions of General secondary education, as well as to attract public attention to the problems of HLS's forming of young people and children (Polozhenie..., 2016). The expert group analyzes and evaluates not only the indicators of the formation of a health-preservation environment for students and improving their health, but also the improvement of the teaching staff and its involvement in physical culture and sports. Unfortunately, an excellent initiative of the Public Chamber is nullified by weak coverage of the results of the competition in the local media.

One of the activities that form the students' health motivation is the monitoring of individual health, in particular, with the help of express-methods. In this article we present the results of rapid assessment of somatic health of future Bachelors of Pedagogics.

The assessment of physical health was conducted by the students at the laboratory classes under the teacher's supervision. The students acquired skills of the instant diagnosis of the physical health level by the method of G.L. Apanasenko (2006). We determined that most of the indicators of the examined students were within the limits of the age physiological norm. The survey results showed that the weight-speed and life indices of the examined females (respectively 354.22±7.98 g/cm and 46.37±1.57 ml/kg) and males (respectively 394.70±7.46 g/cm and 59.86±2.29 ml/kg) corresponded to the age norm.

The functional state of the cardiovascular system plays an important role in the adaptive reactions of the organism to changing external conditions and is often a limiting factor. Average values of heart rate and blood pressure parameters are within the norm. Robinson index indirectly indicates the oxygen consumption by the myocardium and characterizes the systolic work of heart. The average value of the girls' and boys' Robinson index (80.24±2.39 and 77.04±4.55 relative units, respectively) and the recovery time after 20 sit-ups (57.18±4.0 and 52.5±3.05 seconds, respectively) indicate a good condition of the functional reserves of the cardiovascular system of students.

The assessment of the functional state of the respiratory system and resistance to hypoxia showed that the examined girls and boys have average and above-average reserve capacity. The breath-holding test (Stange's test) also characterizes a good resistance to hypoxia: 56.7 ± 3.2 seconds for girls and 70.8 ± 5.4 seconds for boys.

The average value of the adaptive potential characterizes the satisfactory degree of adaptation of the females' and males' circulatory system $(1.9\pm0.04 \text{ and } 1.95\pm0.05 \text{ relative units, respectively})$. It is established that the circulatory system in girls and boys is characterized by sufficient potential.

The power index characterizes the strength of the flexor muscles of the hand and indirectly reflects the state of the muscular system as a whole. It is established that the average power indexes

(38.92±1.59% for girls and 58.85±4.88% for boys) are 20% below the norm and indicate weak development of the flexor muscles of the hand.

The diagnosis of physical health of students showed its average level (unsafe – according to Apanasenko) in the majority of the examined girls (9.8 ± 0.4 rating points) and boys (11.9 ± 0.9 rating points).

Discussions

Traditionally, the subject-teacher sees the main goal of his work as the formation of knowledge, skills and abilities in his discipline and cares a little about the health-forming and health-preservation component of teaching. Many teachers who come to us for refresher courses or receive higher/second higher education by correspondence, do not have a clear idea about the use of health-forming and HPT in the educational process, can not determine the HPT's place in the educational process, and, often, aren't interested in the HPT's application, or use in their activities the most "primitive" HPT (finger gymnastics, eye gymnastics, the break for P.T., etc.).

It is well known (Bezrukikh, 2012) that the school's educational space factors have a decisive influence on the children health forming. Therefore, the competent organization of health-forming educational space will contribute to physical improvement, the implementation of creative inclinations and improve the children competence and successful adaptation. However, the current fragmentary, unsystematic, weak theoretical justification of health-forming educational activities lead to lack of motivation of the administration and teachers of educational institutions, as well as parents of students, "to introduce innovations and progressive ideas to prevent the deterioration of children's health in the educational space of the school" (Cherepov, 2015; p. 293).

The similar results of the diagnosis of students' physical health were obtained in other regions of Russia (Matveev, 2017; Roslyakova et al., 2015). The results of the instant diagnosis allowed us to identify 4 groups with different levels of physical health. Group 1 consisted of students with a low level of health (3.1% of the examined girls and 7.1% of the examined boys), group 2 - with a level of health below the average (28.2% and 7.1%, respectively), group 3 - with an average level of health (65.6% and 57.2%, respectively), group 4 - health above the average (3.1% and 28.6% respectively). Among the examined students, none was identified with a very high level of health. In accordance with Apanasenko (2006) the level of health in groups 1-3 is assessed as unsafe, in group 4 - safe. Thus, the majority of the examined girls (96.9%) and boys (71.4%) have an unsafe level of health.

The diagnostics of the level of physical health of students of VyatSU demonstrates all-Russian trends: a decrease in the reserve capabilities of the cardiorespiratory system against the background of maintaining functional indicators within the limits of age norms. Similar results were obtained in the studies of other authors in various regions of Russia (Kretova et al., 2014, Lebedev et al., 2014; Matveev, 2017; Nikiforova, 2016; Ondar et al., 2013; Tretyakov et al., 2014).

The conducted examination of physical health of the students of VyatSU allowed us to reveal the regional peculiarities of the physical development of students. In particular, compared to the data of other regions the students who live in Kirov have:

- lower respiratory functions (Lebedev et al., 2014; Kovyazina et al., 2016; Matveev, 2017; Tretyakov et al., 2014);

- lower muscle strength (Mandrikov et al., 2017);

- higher reserve and adaptive resources of the cardiovascular system (Kovyazina et al., 2016;

Kretova et al., 2014; Lebedev et al., 2014; Mandrikov et al., 2017; Matveev, 2017; Nikiforova, 2016).

Considering the average score of the groups, the level of physical health of the students in Kirov is generally lower than in Siberia (Lebedev et al., 2014; Ondar et al., 2013), but higher in comparison with the southern regions (Mandrikov et al., 2017; Tretyakov, Drogomeretskii & Agoshkov, 2014).

The revealed unsafe level of students' health became, in our opinion, the result of the absence of an integral system for the formation, protection and strengthening of individual health, in other words, the lack of health culture.

Conclusion

Diagnostics of somatic health is one of the most effective methods of increasing students' motivations to health-preservation. The results of the instant diagnosis of the level of physical health of VyatSU students showed that the average functional indicators, with the exception of the power index, are within the norm. But the majority of the examined students (over 90%) have a low, unsafe level of physical health. Thus, training of volitional powers and overcoming one's own inertia are necessary for formation of health-preservation competence.

The development of academic disciplines and the forming of health-preservation motivation contributes to the formation and development of future teachers' health-forming and health-preservation competences – the cognitive component of a culture of healthy and safe lifestyle. At the level of Bachelors of Pedagogics training this problem should be solved mainly through the formation of general professional competencies – the formation of a system of values and motivations for a healthy and safe lifestyle. At the level of Master's degree more attention should be paid to the formation of special competences that allow developing and implementing methods of formation of health-preservation motivation in the educational process.

The results of the work have practical value for the organizing of health-forming educational space in the University. The introduction of the theoretical foundations of health culture and HLS in the academic disciplines' studying forms health-preservation knowledge and skills and increases health-preservation motivation.

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