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**DEVELOPING THE COMPETENCE IN HEALTH PROTECTION
OF PEDAGOGICAL BACHELOR STUDENTS**

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Abstract

The incompetence of a teacher in the area of health protection can be viewed as a risk factor that can potentially jeopardise schoolchildren's health. The increase in the valeological competence of students and formation of the system of values and motivations for self-preserving behaviour can be achieved through pedagogical disciplines. The aim of this research was to study the ways and methods of forming the health-preservation competence of bachelor pedagogical students through a range of pedagogical disciplines, as well as to assess the physical health of students as the method to increase their health consciousness. To achieve this goal normative documents have been analysed, the systematization and generalization of the experience of the Department of Biomedical Disciplines has been carried out; class-based and other types of work related to the formation of health-preservation competence of bachelor pedagogical students has been organized at Vyatka State University by means of educational disciplines using passive, active and interactive teaching methods; the somatic health of first year and fourth year students has been assessed. As a result of the research, it was revealed that the insufficient level of valeological knowledge leads to inadequate assessment of an individual's health and low motivation for health preservation. It is shown that the physical health of most students has deteriorated during their university studies. Thus, engaging in health-orientated disciplines forms the valeological and health-preservation competences of students along with the system of values and motivations for a healthy lifestyle. It creates a need for regular check-ups of health.

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Keywords: Health, students, forming of health-preservation competence, motivations.



1. Introduction

The professional competence of a teacher reflects the level of his/her theoretical knowledge and practical skills, as well as the ability to solve pedagogical problems in a real practical situation. In view of the constantly deteriorating state of health of younger generations due to irrationally organized educational activity, a problem arises in relation to the need for the formation of health-preservation competence of teachers (which is defined as the professional readiness of teachers for addressing problems related to health-preservation activities and readiness for health protection) (Fedorov & Tretyakova, 2014).

The low health-preservation competence of a teacher poses a risk for students' health (Bezrukikh, 2012). Teacher's experience presupposes the conduct of educational activities in accordance with the age and individual characteristics of a child. Bezrukikh (2012) notes the main shortcoming of the state system of training and retraining of bachelor students in the area of pedagogy: 'minimum and obviously insufficient level of knowledge in age physiology, development psychophysiology which prevent from constructing a health-preserving educational process'.

2. Problem Statement

The incompetence of future teachers in the sphere of health protection is noted by many researchers (Verkhorubova and Podlesskaya, 2013; Pazyrkina and Sopko, 2014). To strengthen the valeological competence, we propose the introduction of new technologies, the new forms of organization of educational activities and new materials. Thus, Dewhirst et al. (2014) justify the relevance of organizing special Health Days to improve the health and medical competence of students and teachers. A number of authors (Verkhorubova and Podlesskaya, 2013, Pazyrkina and Sopko, 2014, Savina et al. 2010) recommend introducing in the curricula of bachelor education programmes special courses of health-preservation subjects. In our opinion, the problem of increasing competence in matters of health protection should be addressed not only by the introduction of new special courses (that are often optional), but by means of mandatory educational disciplines. In view of the developments in the area of higher education there are now opportunities to offer more modules and materials that help improve the valeological competence of students and form the system of values and motivations for self-preservation behaviour.

On the other hand, available knowledge and skills still do not guarantee the preservation of individual health. For this, a system of values and incentives for self-preservation behaviour is needed (Fadeeva, 2015). We understand incentives for self-preservation as 'the system of internal motivational forces that promote among students the systematic use of the healthy life-style requirements for a healthy lifestyle' (Voronov and Tokman, 2016). Despite a large number of works on this topic, each illustrates only its individual aspects (classification of motivations, criteria and indicators of the formation of motivations, etc.). However, there is no experimental verification of pedagogical conditions for the formation of motivation for students to preserve and promote health (Voronov and Tokman, 2016) and the introduction of methods for shaping motivations for health protection in practice.

An important factor why students do not maintain a healthy style is their low socioeconomic status (Geraskina et al., 2016, Mandic et al., 2012), which does not allow choosing advertised in the media

means and methods of health improvement (fitness centres, organic food, vitamin and mineral supplements, etc.).

3. Research Questions

Within this context, there are two research questions in our paper:

How to increase the competence of bachelor pedagogical students in the area of health protection through educational disciplines?

How to increase students' motivation for preserving their health?

4. Purpose of the Study

The purpose of the research is to study the ways and methods of forming the health-preservation competence of bachelors of pedagogy by means of educational disciplines, as well as to assess the physical health of students as one of the methods to increase motivation for health protection.

5. Research Methods

We have analysed normative documents; in particular, we have carried out a comparative analysis of the Federal state educational standards of higher education in the relevant area of training bachelor students (2011, 2016). Also, we have analysed the contents of the academic disciplines in the curriculum for the specialisation 'Safety of vital activity. Extended education' and generalized the experience of teachers of the department of medical and biological disciplines of Vyatka State University (VyatSU).

The diagnostics of the level of the somatic health of students enrolled in the aforementioned programme at Vyatka State University with the use of the method of Apanasenko (2006) was conducted in March 2012 and 2013 (1st year students, age 17.8 ± 0.4 years) and then again 4 years later (the same groups re-examined) in March 2015 and 2016 (4th year students, age 22.06 ± 0.23 years). The results were statistically processed according to generally accepted formulas in Microsoft Excel with the assessment of the reliability by the significance test p (the differences between the groups were considered reliable at $p < 0.05$).

In conclusion, the systematization and generalization of the facts was carried out

6. Findings

6.1. The analysis of ways and methods of forming the health-preservation competence among bachelor pedagogical students through educational disciplines.

In accordance with the Federal State Educational Standard of Higher Education (2016), bachelor students who mastered the programme of pedagogy in the field of 'Life Safety. Extended education', should be ready to ensure the life and health of children during the educational process (this item was absent in the Federal State Educational Standard of Higher Professional Education (2011)). Therefore,

bachelor pedagogic students should have the following competences in the field of health protection of students:

- able to use first aid techniques and methods of protection in emergency situations;
- ready to ensure the safety of life and health of students;
- fully aware of the methods of promoting a healthy lifestyle, the culture of safe behaviour, preservation and strengthening of students' health and ways and methods of providing pre-medical care.

In this case, it is necessary to note the incorrect formulation of the competence. In accordance with Article 31 of the Federal Law 'On the Basics of Health Care of Citizens in the Russian Federation' (2011), the aid provided by people without special medical education is called first aid, and pre-medical care refers to the category of medical care.

In this article, we will consider in detail the formation of a special competence and knowledge of 'the methods of forming healthy lifestyle, culture of safe behaviour, preservation and strengthening the health of students, ways and methods of providing pre-medical care'. The person who possesses this competence:

- should know the norms of a healthy lifestyle, the culture of safe behaviour, methods of ensuring the safety of children and adolescents, ways of providing first aid in emergency situations;
- should be able to ensure the safety of children and adolescents, analyse the functional state and performance efficiency, create optimal conditions for the organization of the educational process and provide first aid for various injuries;
- should have the skills and (or) experience to train pupils' so that they could preserve and improve their health, to ensure the safety of children and adolescents, and to provide first aid when accidents occur.

The formation of this competence begins from the first year of studies, over the course of such educational disciplines as 'Anatomy', 'Health education of schoolchildren' (or 'The basics of Social Medicine'), 'Personal safety of schoolchildren' (or 'Education towards safe behaviour culture'), 'Safety of pedagogical activity', etc. Freshmen students get basic knowledge about health, its types, components, health-forming factors, healthy ways of living, etc. The academic discipline 'Anatomy' is a fundamental theoretical universal module that outlines the morphofunctional features of the human body under normal and abnormal conditions. Using this knowledge, one can form an idea of one's individual physical health and the possibilities of its improvement. Students learn to assess the level of their physical and mental health, conduct hygienic assessment of classrooms, gyms, timetables, etc. In addition, they receive the skills of scheduling lessons, arranging furniture in the classroom, placing students in accordance with their state of health, organizing physical activity breaks in class, etc.

Further formation of knowledge about the morpho-functional features of the human body, the development of skills to monitor individual development and health status, the analysis of the functional state and performance efficiency taking into account gender and age characteristics occurs over the course of studying such educational disciplines as «General Physiology with the Basics of Biochemistry», «Physiology metabolism and energy in muscle activity», «Age anatomy, physiology and hygiene». We have to state that the exceptional importance of the discipline «Age anatomy, physiology and hygiene» is recognized by far not all teachers of higher education, and, consequently, students. Those who usually design educational programs allocate insufficient amount of hours for this discipline. In most Russian

bachelor pedagogical programmes it is usually over their first year of studies that students do not yet realize the importance of knowledge regarding the growth and development of children, the influence of educational activity on the functional state of a child's body, etc. At the same time according to several authors (Savina et al., 2010), without knowledge of these processes and patterns teacher education cannot be adequate and effective. By the time students start their third year of studies, they partially forget the theoretical knowledge obtained over previous years; so by the time student teachers begin their work with children they cannot organize their lessons in accordance with the individual characteristics of pupils.

Basic knowledge in the field of normal anatomy and physiology is the basis for a correct assessment of the status of the body in traumatic injuries and emergencies. The skills necessary for providing first aid, in our opinion, are the sign of a teacher's high qualification. The principles of first and emergency aid, recognition of symptoms of urgent conditions are considered in the framework of the disciplines 'Methodology of giving first aid to an injured' and 'Methodology of preparing for providing medical help in emergency situations'. Over the course of the laboratory work student teachers develop skills and knowledge necessary for providing first aid in situations when somebody is injured or when somebody is experiencing cardiovascular, allergic, psycho-neurological and other types of health problems.

The combination of passive (for example, filling in text gaps, drawing sketches and schemes, etc.), active (searching for mistakes and correcting them) and interactive (project-based activities, brainstorming, etc.) teaching methods is of great importance in the organization of classroom and independent work of students. The most effective methods of organizing classes in these disciplines are interactive as they stimulate the interest of students towards the academic disciplines, promote the development of intellectual independence and communication skills, personal approaches to the problem, develop leadership skills and tolerance to others (Grigorash and Trubilin, 2014). In practice, the most frequently used: business games (for example, to prepare and conduct a lesson for students of the 8th grade on the topic 'Basic concepts of health and healthy lifestyles'), case studies (for example: a man accidentally touched bare wires caught in the branches of a tree over a storm and is now lying unconscious; determine the nature of this accident and demonstrate first aid measures), situational problems (for example, what type of bronchitis is more likely to lead to a situation in which a pea gets stuck in a child's throat when she/he accidentally inhaled it while playing; what is the first-aid in this situation), and others. The most convenient form of organisation is to work in small groups (2-4 people), in which everyone can be try both the role of an injured person and the role of the one who provides first aid. This makes it possible to work out the correct sequence of actions in emergency situation, to maintain confidence in the state of mental and emotional stress. For exploration and development of practical skills of first aid, simulators are used.

To assess the level of development of health-saving competence, Zeer and Yugova (2014) propose using the epistemological (level of knowledge about health and healthy lifestyles), value-semantic (value attitude to one's own health and health of others) and activity (practical skills and skills for preservation and maintenance of health) criteria. Vyatka State University uses similar criteria and tools for their evaluation at the Department of Medical and Biological Disciplines.

Thus, for the formation of a complex of knowledge, skills and of health-preservation activities, the systematic approach is needed "in the study of the physiological, hygienic and psychophysiological aspects of the educational process at the theoretical, practical and research levels" (Savina et al., 2010).

6.2. Diagnostics results of physical health of students

It should be noted that having a sufficient level of valeological knowledge, not every young person will follow the principles of a healthy lifestyle. The main reason, from the point of view of a number of authors (Osipov et al., 2016; Stanishevskaya, 2014; Fadeeva, 2015), lies not so much in the Russian mentality as in the lack of effective motivations of youth for health protection. Many students, according to the surveys of Biktagirova & Kasimova (2016), refer to the lack of free time for maintain a healthy lifestyle which is the result of irrationally organized activities, in our opinion. This leads to chronic stress, a decrease in one's resistance to illnesses and the deterioration of physical health (Goncharova et al., 2013). Therefore, monitoring the level of health is highly important.

The assessment of the physical health of students showed that it is on an average level (according to Apanasenko it is unsafe) in the majority of the examined: the average score in all groups is lower than 14 (Table 01). A safe (above average) level of health is 60% for boys and 55% for girls in the first year of studies; in the fourth (final) year it is 33.3% for boys and 61.1% for girls. Similar results (low and below the average level of somatic health of first-year students) were obtained in other regions of Russia (Belousova and Bukov, 2016, Goncharova et al., 2013; Osipov et al., 2016).

Table 01. The assessment of the physical health of students.

Indicator	Boys		Girls	
	1 st year n=10	4 th year n=9	1 st year n=20	4 th year n=18
Weight-growth index, g/cm	386,15±4,25	429,11±15,51	349,05±12,15	348,09±6,93
S*	p<0,05; t=2,671		p>0,1; t=0,069	
Life index, ml/kg	65,28±1,12	61,35±1,14	58,65±4,05	55,41±2,03
S	p<0,05; t=2,459		p>0,1; t=0,715	
Power index, %	67,31±1,11	64,38±1,42	47,82±2,51	48,2±1,79
S	p>0,1; t=1,626		p>0,1; t=0,123	
Robinson index, c.u.	78,35±1,75	83,20±1,30	74,55±3,76	74,6±3,11
S	p<0,05; t=2,25		p>0,1; t=0,010	
Recovery time after 30 sit-ups, s	58,6±1,11	65,25±2,12	51,65±6,65	70,13±4,62
S	p<0,05; t=2,779		p<0,05; t=2,282	
Average value	12,67±2,44	10,48±0,59	12,72±2,64	13,33±0,54
S	p>0,1; t=0,872		p>0,1; t=0,226	

* S – statistical significance between the groups

Deterioration tendency of the majority of the indices among boys of the 4th year is compared with the ones in the first year: a reliable decrease in the vital and strength indices, as well as a significant increase in Robinson indices and weight-growth, recovery time after 30 sit-ups (Table 01). For girls, a significant increase in the recovery time after a physical activity was revealed; the remaining indicators remained virtually unchanged (Table 01). The results of express diagnostics of the level of physical health did not correspond to the subjective assessment: the majority of the participants assumed a high level of health, since their main functional indicators corresponded to the age norms, there were no signs of deterioration during physical exercises, and many respondents attended additional P.E. classes. Thus, regular diagnosis of the level of somatic health is one of the most effective methods of increasing motivation for health protection, and, in particular, for physical training and sports.

Moreover, Cleland et al. (2009) suggest an improvement in the socio-economic situation, provided with high physical activity due to the improvement of educational and professional opportunities. It is well-known that strengthening and preserving health does not necessary involve significant financial investments: daily walks in open air, following one's daily regime, sufficient night sleep, rational nutrition with enough vegetables and fruit, prevention of stress and maintenance of hygiene (including when working on a computer).

7. Conclusion

Annual health reduction of children and young people is stated by many authors (Verkhorubova and Podlesskaya, 2013; Geraskina et al., 2016; Lebedev et al., 2014; Savina et al., 2010; Fadeeva, 2015; Fertikova and Rogachev, 2015). In connection with which there is a need for regular monitoring of health status, as well as the introduction of health-preservation technologies in the educational process. The improvement of the system of training teachers should aim to create conditions for the preservation, strengthening and development of the health of future teachers, and increase in their competence in the formation, preservation and strengthening of the health of their future students.

Mastering educational disciplines such as "Age Anatomy, Physiology and Hygiene", "Fundamentals of Medical Knowledge and Healthy Lifestyles", "Education of the Schoolchildren's Health Culture", "Safety of Pedagogical Activity", etc., allows developing knowledge about health and methods of its protection and strengthening. The use of active and interactive teaching methods contributes to the development of a set of health-preservation skills. Developing health-preservation skills occurs during classes using interactive forms when the learning process imitates as closely as possible real professional situations (Chemirilova, 2015).

To form health-preservation competence, in addition to increasing valeological competence, encouraging motivation to pursue a healthy lifestyle is required. The assessment of the level of physical health of Vyatka State University students reflects national trends: a decrease in the reserve capabilities of the cardiorespiratory system against the background of the preservation of functional indicators within the limits of age norms. In our opinion, the revealed tendency towards unsafe levels of health has been the result of the absence of an integral system of formation, preservation and strengthening of public health. The results presented in the study demonstrate the high importance of health education.

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