

Influence of the adaptive physical training and sports on socialization of the individuals with limited physical abilities

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ABSTRACT

This study reveals the issues of effective socialization by means of physical culture and sports of students with limited physical abilities, which number, unfortunately, grows with every year. The article analyses the obtained experimental data on the use of adaptive physical training and sports for group of cadets with limited physical abilities with aim of their socialization and motor quality development. Individual programs were developed for such students, which are founded on several aspects: physician-biological, pedagogical, social and psychological. Ultimately, all the above taken together gives the positive result in physical and motor fitness of cadets with limited physical abilities for successful socialization in the future. These problems relate to new state standard on physical training.

Keywords: Students; Adaptive physical culture; Sport; Socialization of a personality.

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INTRODUCTION

For centuries, it has been proven that certain physical exercises contribute to the development of functional systems of the body, increase the overall level of health, immunity, adaptability, and stimulate mental activity. It is also necessary to note the positive impact of physical education and sports on personal development, which is clearly evident among cadets. In order for their physical form to be at a high level throughout their life, cadets need systematic sports classes in their educational institution. Long-term research shows that the physical potential of a person is formed primarily in the first twenty years of his/her life. It is during this period that it is necessary to achieve, perhaps, a higher level of development of physical qualities for each person. There is no doubt that discovering new health-improving effects of the use of physical culture methods will increase the quality of the potential inherent in the nature of cadets (Eller, 2017; Jones et al., 2016; Maaros & Landor, 2010).

It is known that among the reasons negatively affecting health is the lack of motion, when adolescents do not have opportunities to engage in physical training and sport on a regular basis. Insufficient number of sports facilities and multiple cost advance for physical training and sports services have made physical training and sports establishments not readily available for the majority of students. The government considers physical training and sport to be the most important tools for the development of human's potential, one of the most effective methods to maintain and protect health, increase the capacity for work and extension of active life period (Muller & Ryabinina, 2012).

Students with low physical activity require additional external stimulation: constant attention from their teachers and friends, encouragement, including working with high-performing students. Among the main motives involved in physical culture, according to many studies, are: health promotion, getting pleasure from activities (having a good time), communication, the encouragement from parents.

Motivation to physical activity is the special condition of the personality directed on achievement of an optimum level of physical fitness and working capacity. The process of formation of interest to physical culture and sports is not a momentary but multi-stage process: from the first basic hygiene knowledge and skills to deep psycho-physiological knowledge of the theory and technique of physical training and intense exercise (Namazov, 2015).

One of the reasons for the deviation in the state of health and the deterioration of its indicators is an insufficient amount of motor activity. Restriction of muscle activity forms a habit of sedentary lifestyle, which makes it unattainable to use physical culture and sports for the purpose of self-development and self-realization. Involvement in systematic physical exercise is a long process, the effectiveness of which is determined by the consistent solution of the following problems:

- Assimilation of the experience of mankind in the use of physical culture and sports for versatile harmonious development, including the formation of motor-coordination, moral-volitional, and intellectual qualities;
- Use of various means and forms of activities that meet the interests and needs of different groups and categories of the population;
- Assimilation of the values of physical culture and sport as a spiritual and moral basis for understanding the role and place of physical culture and sports, disease prevention, and the need for a healthy lifestyle (Kochurova et al., 2018).

The structure of building physical training in higher educational institution is carried out through education, training and sports activities. All its parts and links interact with each other through psychological and physiological directions, through the motor activity of the student. The major feature of the system is the appearance of new integrative qualities that are not characteristic of the parts that constitute this system. The peculiarity of a particular system of physical education are determined not so much by individual examples of its implementation, but by the features of the socio-economic and socio-political state structure of a particular society. The structure of the national system of physical education is a unity of the main components. The aim of physical education is to promote the formation of the fundamentals of personality's physical culture as an essential condition for strengthening human health, the formation of reasonable, decent appearance of modern human lifestyle (Kirichenko & Ponomarev, 2013).

As rightly noted Tkachenko (Tkachenko, 2014), the new educational system in the field of physical culture is founded on a triad: personality cultivation, education, health improvement. To achieve this goal, all participants in the educational process should be united and strive to combine the student's personal interests and abilities to form cognitive forms of thinking: knowledge transfer and education should be aimed at the true values of a person – his/her health, vitality, productive longevity, and a happy life.

Professional education of students at the university is characterized by a large amount of information, highly intellectual content of educational material. Educational and cognitive activity is accompanied by hypodynamia, overstrain of the nervous system, occasionally experiencing a state of stress (examination period).

There is a situation of urgent need to take a whole range of preventive measures: compliance with the student's day-to-day hygiene regime, personal hygiene, the use of non-medicinal means of body restoration, active recreation with the use of physical culture and the whole complex of constituents of healthy lifestyle (Tkachenko, 2014).

Physical fitness of students plays numerous roles. Technical progress, rapid development of science and an increasing amount of new information required by a modern specialist, make the student's educational activities more intense and stressful. Accordingly, the importance of physical culture as a means of optimizing the mode of life, active recreation, maintaining and improving the performance of students throughout the entire period of study also increases.

A number of studies have found that students who are involved in systematic physical education and sports and show a high level of activity in them develop a certain stereotype of the daily routine, have increased behaviour confidence, and have a high vitality. They are more sociable, express a willingness to cooperate, enjoy social recognition, and are less afraid of criticism. They are more likely to be optimistic and energetic, and there are more persistent and determined people among them (Gubanov et al., 2016).

As wrote in his book Dr. Ratey (2008), exercise improves learning on three levels: *"First, it optimizes your mind-set to improve alertness, attention, and motivation; second, it prepares and encourages nerve cells to bind to one another, which is the cellular basis for logging in new information; and third, it spurs the development of new nerve cells from stem cells in the hippocampus"*.

Given that the brain is responsible for both mental processes and physical actions of the human body, brain health is important across the life span. In adults, brain health, representing absence of disease and optimal

structure and function, is measured in terms of quality of life and effective functioning in activities of daily living (Kohl & Cook, 2013).

The study of Committee on Physical Activity and Physical Education in the School Environment (Kohl & Cook, 2013) was focused on the effects of moderate physical activity on the cognitive abilities and overall academic performance of students. This review showed that children respond faster and with greater accuracy to a variety of cognitive tasks after participating in a session of physical activity.

It is important that students know what impact physical training has on the body, what is the meaning of all training processes. A set of training tools and methods used at all stages of the training process should ensure the creation of a solid base of comprehensive motor fitness.

All types of activities that are associated with active motor activity are designed to promote the normal functioning of the main body systems, improve this activity and create prerequisites for maintaining and strengthening health. With the help of specially selected physical exercises, one can improve many indicators of physical development (body weight, chest circumference, vital capacity of the lungs). However, each student must learn to “*understand*” their body, constantly observe and analyse its reactions to various loads.

Physical education combined with mental, moral, aesthetic and labour education provides a comprehensive development of the individual. Moreover, these aspects of the general process of education are largely manifested in the process of physical education itself, which is organized accordingly.

As a subject of study, physical education differs from other specific tasks, means and forms of organization of training sessions. It is not enough for a student to hear, see, understand, and remember the material in the course of classes. It is necessary to act physically, repeatedly and persistently perform special motor tasks. Mastering motor skills, their improvement will be more successful when they are based on well-acquired theoretical knowledge. The ability to apply the basics of technology in practice, learn new things about the physiological laws of development and activity of the body, know the content and methods of training, as well as the rules of sports competitions.

The purpose of physical education is specified in its tasks:

- The health-improving task consists in the harmonious development of the forms and functions of the body, aimed at strengthening health, increasing the stable resistance to diseases and body fortification, in the formation of vital motor skills, abilities and knowledge;
- The cultivational task is to use the means of physical culture for the cultivation of an active, mobile person who can quickly adapt to changing life and use the existing knowledge, skills and abilities in various life situations;
- Educational task is the development of specific knowledge in the field of physical culture, the formation of skills and abilities through the development of independence as the leading quality of a modern human personality in the process of the student's subjective inclusion in the pedagogical process and the formation of a reflexive position (Makeeva, 2013; Opletin & Kuznetsova, 2014).

The solution of these tasks involves: understanding the role of physical culture in the development of the individual and preparing him/her for professional activity; knowledge of the scientific and practical foundations of physical culture and a healthy lifestyle; forming a motivational and value attitude to physical culture, setting a healthy lifestyle, physical self-improvement and self-education, the need for regular physical exercises and sports; mastering a system of practical skills that ensure the preservation and strengthening of health, mental

well-being, development and improvement of psychophysical abilities, qualities and properties of the individual, self-determination in the field of physical culture, providing general and professional-applied physical fitness, which determines the student's psychophysical readiness for the future profession; gaining experience in the creative use of physical culture and sports activities to achieve life and professional goals (Voronin, 2011).

In the field of physical education and sports science, the skill presentation is different and affects certain aspects of professional training, such as the ability to use theory and concepts - required in teaching, based on the cognitive ability acquired through the instruction and interaction activity, on the ability to practice motor skills, the ability to interact and adapt an attitude, the ability to convey and display moral values, the ability to a fair appreciation of one's activity and of those with whom we work with (Gloria et al., 2015).

Physical culture in the higher educational institution performs the following social functions:

- Transformative and creative, which ensures the achievement of the necessary level of physical development, preparedness and improvement of the individual, strengthening his/her health, preparing him/her for professional activity;
- Integrative and organizational, which characterizes the possibilities of uniting young people in collectives, teams for joint physical culture and sports activities;
- Projective-creative, defining the capabilities of sports activities, which stimulates student's creativity, processes of self-knowledge, self-development, ensures the development of individual abilities;
- Projective and prognostic, allowing to expand students' erudition in the field of physical culture, actively use knowledge in physical culture and sports activities and correlate this activity with professional categories;
- Value orientation, when professional and personal value orientations are formed;
- Communicative and regulatory, reflecting the process of cultural behaviour, communication, interaction of participants of physical culture and sports activities, the organization of meaningful leisure, affecting the collective mood, experiences, satisfaction of socio-ethical and emotional-aesthetic needs, the preservation and restoration of mental balance, distraction from smoking, alcohol, substance abuse; socialization of the individual (Fatyanova et al., 2019; Markin & Parfenov, 2013).

There are different models for organizing physical education classes. Among two main ones are: conducting physical education classes for generally healthy students of the main and preparatory groups and organizing classes for students of a special medical group. The first step for this division is the analysis of the main indicators of the number of students and quality of their health, and their attitude to physical activities. Such an analysis allows identification of the structure of the target audience, existing problems, more precisely determine ways to increase motivation and attract students to physical education, evaluate the resources available to the educational institution, the use of which can contribute to improving the well-being of students (Kaznachev et al., 2015).

Successful combination and implementation of personal and socially significant goals by a student in a higher educational institution requires his/her successful adaptation to increasing intellectual and physical loads, effective actualization of own abilities, creative attitude to the main activities of the university on the basis of awareness of social responsibility. At the same time, it is important to note that socially healthy student activities (educational and professional, scientific, social and managerial, creative, sports) should be implemented not only within the higher education institution but also outside it. The higher educational institution serves on the one hand, as a training and experimental platform for these practices, on the other

as a launching pad that forms the basis for effective “*post-graduate*” self-actualization in professional, personal and public life (Gubanov et al., 2016).

The value of physical culture is not only in the acquisition and preservation of health, but also in the fact that it is an effective tool for personality formation and character improvement, helping a young person to successfully socialize and adapt to the professional community. Nowadays it is clear that the restoration of the concept of physical education is possible only if everyone understands that the basis of health depends primarily on the ability to independently assess and correct own health state. Only then will physical education and sports lose the status of an individual hobby for the Russian population and become an important factor in improving their life quality, a competitive advantage in their career, an important channel for meeting social needs when communicating with others (for example, during sports games), an additional opportunity to strengthen family relationships, and another way of self-expression (Kaznacheyev et al., 2015).

Improving the effectiveness of the process of physical training of students of higher educational institutions, which is becoming more important these days, is currently impossible without taking into account the individual characteristics, requests and motivation of students.

Increasing motivation to engage in physical culture and sports can only be performed on the basis of students' awareness of the importance of these activities and the ability to meet certain individual needs through them (Pushkarskaya et al., 2017).

The cultivation of good manners, education and awareness of motivation for health improvement requires the availability of methods, methodological techniques for improving health with the help of physical education, a healthy lifestyle, and the elimination of bad habits. Self-recovery requires the acquisition of useful habits and skills, mastering the methodological techniques of physical education classes.

A properly organized physical educational process provides for the disclosure of a whole set of educational values of physical culture, both in the sphere of optimal motor activity and in the sphere of competence of related scientific disciplines that unite and link the hidden mechanisms of functioning and strengthening their viability, a single self-regulating human body. High quality and effectiveness of the educational process requires the direct active participation of the student, his/her purposeful motivation and the combined efforts of the entire array of specialists of the department of physical education and sports (Tkachenko, 2014).

In this regard, when developing technologies of physical education, designed to provide and increase the level of motivation, it is necessary to clearly understand what requests and needs the driving force are, incentives for conscious physical education and sports among students and what main trends form the motivation for these activities. It is also important to know how the structure of motivation changes throughout the entire period of study in higher educational institution (Pushkarskaya et al., 2017; Ilyinich, 2017; Vilenskiy, 2016; Ilyin, 2018; Zelenin, 2013; Balashova, 2015; Fedorov, 2017).

Currently, the issue of adaptation of people with disabilities is very acute. Adaptive physical culture is now relevant due to the increase in the number of students who are unable to perform full-fledged physical exercises. Over the past twenty years, a complex of measures that have a sports and rehabilitation character and other elements of health and rehabilitation physical culture for specialized universities has been rapidly developing.

Adaptive physical culture is a type of general physical culture for people with limited physical abilities. The main purpose of this discipline is the maximum possible development of resilience in a person that has deviations in health status by ensuring the optimal operation mode of available bodily movement characteristics and spiritual forces, their harmonization for maximum self-realization as a socially and individually meaningful person. Adaptive physical culture methods allow each person with disabilities to realize own creative potential, reach certain heights and fulfil own desires.

Unfortunately, when working individually with cadets, we came to the conclusion that there is no universal method of training. The application of the method in each single case should be justified by real capabilities, type of personality, cognitive needs, psychological characteristics, interests, experience, etc. Cadets' motor activity significantly depends on physical fitness. This entails additional individual classes, as well as a lack of knowledge about own body and its capabilities. Back in ancient times, Aristotle noted: *"Nothing exhausts and destroys so much, as physical inactivity"* (Panachev, 2013).

MATERIAL AND METHODS

The main goal of the work is to analyse the influence of physical culture and sports on the socialization of cadets. During the study the authors used such methods as scientific literature analysis and summarizing, questionnaire survey, methods of mathematical statistics. Under the adverse environmental conditions of the Perm region, physical training and sports can also become an important means of improving the immunological capabilities of cadets' organism. For example, our systematic use of static exercises in training sessions for game sports in a group of cadets contributed to the development of static endurance, coordination of movement. There was a more pronounced increase in results, an increase in the adaptive capabilities of the cardiovascular and respiratory systems, the development of volitional qualities, productivity, coordination of movements based on subtle differentiations of kinaesthetic sense, expansion of their physical capabilities, which in the whole creates a favourable psychological climate for cadets. Particular rehabilitation effects on such cadets are produced by complex methods of socio-pedagogical orientation with an individual careful approach to each cadet. This requires a special talent and a sensitive heart, multiplied by experience and knowledge. At the same time, it should be taken into account that the data on physical fitness were the result of respondents' self-assessment (and not an objective independent assessment) of own health. However, self-assessment is quite subjective, since it only partially reflects the real state of health. To a greater extent, it depends on social well-being, on a specific life situation, the weather, and is not always based on the results of medical examinations. In this study, only 7 % of respondents based their responses on the results of medical reports, and another 34 % of respondents – both on the results of medical examinations and on the state of health, while the majority of respondents (59 %) assessed their health relying not on medical reports, but only on their current state of health, which can be very relative (Table 1).

Table 1. The basis for the respondents' self-assessment of own health.

Response option	% of respondents
Based on the medical examinations	7
Based on the current state of health	59
Based both on the medical examinations and current state of health	34

The high degree of subjectivity when giving response to this question is confirmed by the answers to other questions in our study. Thus, 17 % of respondents who suffer from diseases of the cardiovascular and musculoskeletal systems, subjectively assessed their health as good or very good, and 15 % of respondents who, in their opinion, do not have such diseases, on the contrary, rated it as bad or very bad. Despite these

shortcomings of the results of the self-assessment method, the distribution of negative and positive health assessments in combination with data on its real state, as well as the analysis of the impact of behavioural factors on health, is an important indicator of the attitude of cadets to health and its strengthening. Thus, in our study, from the obtained responses it follows that the majority of respondents perceive their health as a relatively easy 'renewable resource', do not care about its condition, are not accustomed to take it into consideration, do not resist bad habits. On the other hand, a whole range of factors contribute to the improvement of health and the formation of positive behaviours towards their health in different groups of respondents. Among them, first of all, there is a positive effect of such a factor as reducing the level of anxiety, which in turn was associated with a reduction in the risk of stress and had a favourable effect on somatic health. As the results of various surveys conducted in the Perm region, among the factors that play a particular role in positive health changes are active position in the sphere of educational services in its quality improvement, the availability of various sources of income in the family, diverse, emotionally positive and full recreation, support from relatives and friends, positive health-promoting practices etc (Bezrukikh, 2014). At the same time, the most important functions of the body suffer: movement, speech, and mental state. A characteristic feature is the lag in the cadet's motor development, caused primarily by abnormal distribution of muscle tone and impaired coordination of movements. With poor physical fitness, the functional system of movement suffers, and communication with the environment is disrupted. This negatively affects the activity of a cadet, his/her mental and physical development. Unfortunately, the civilizational development of Russian society annually increases the statistics of young people with disabilities.

The higher school faces a very important challenge - rehabilitation and socialization of cadets by means of education. Physical training and sports take a leading place in solving this problem. In addition to compulsory physical education, these allow expanding the scope of the educational space through physical rehabilitation, motor recreation and sports (Panachev, 2016; Panachev, 2018; Dembo & Zemtsovskiy, 2018; Gogunov & Martyanov, 2016). An urgent problem is the development of effective methods and tools for correcting and adapting deficiencies in the physical development of the musculoskeletal system and muscle performance of cadets with physical fitness disabilities (Panachev, 2013; Bezrukikh, 2014).

Table 2. Ranking of the importance of physical culture and sports classes.

Response option	% of those who responded positively
Health strengthening	79
Maintaining the physical fitness, shape	48
Maintaining the efficiency of performance	32
Stress relief	29
Promotion of longevity	28
Communication with friends	19
Enjoyable pastime	15
Getting pleasure from physical activity	18
Other	0.2
It's hard to answer	2.8

RESULTS AND DISCUSSION

Training sessions with such cadets were conducted by teachers of the department of physical training and sports, trainers-teachers of supplementary education, methodologists-instructors. The participants of the experiment were under the supervision of doctors: a neurologist, a psychiatrist, a therapist, and an orthopaedist. Training loads in the "experimental" group were given with regard to physical fitness, individual

characteristics of students and maintaining their interest in training. At the beginning of the experiment, the level of physical development of cadets in the experimental and control groups was significantly lower than that of their peers from the “*main*” group. It should also be noted that the initial data of the cadets indicated an uneven development of motor qualities. Over the course of the experiment, individual indicators in all groups remained the same during the summer months, and in some cases even decreased. The result of the experiment also reveals that the regime with a sports orientation contributes to improving the functional capabilities of the cadets’ organism, improving their somatic health. According to the data of the academic year, the cadets have never been ill with colds and flu, they have not had an exacerbation of chronic diseases, and their health has improved. They coped with training tasks, which contributed to their successful performance in competitions: there are reserve capabilities of the body and the ability to do sport. This is probably due to the fact that the physical development of cadets depends on the characteristics of motor skills – “*persistent impairments of individual components of movement*”. The predominance of growth in indicators in the experimental group was observed in the sixth month of the experiment, which indicates the compensatory mechanisms of the cadets’ organism, which were manifested as a result of training sessions. The result of the experiment was the average group indicators of growth in the dynamics of physical fitness; the advantage of cadets from experimental group during mass sports activities. In addition to this direct effect, sports have a great social and psychological significance.

The rationally organized mode of motor activity proposed and used in this study as a natural stimulus for life activity allowed us to obtain comprehensive objective information about the psychophysical capabilities of cadets. It was established that the cadets who participated in the experiment have reserve capabilities of the organism and the ability to perform sports activities.

Control tests have shown that the most effective in the development of motor qualities of cadets is a mode with a sports orientation. Tables 2 and 3 present the cadets’ answers to the question “*What do you think you need to do to have good physical fitness?*” (Gogunov & Martyanov, 2016).

As can be seen from Table 3, physical education and sports occupy the third place in the ranking after the main factors for ensuring good physical fitness – the need to follow a healthy diet, having active pastime and leading an active lifestyle (47%, 48% and 56%, respectively). At the same time, physical training and sports, active recreation with a mobile lifestyle entail high physical activity, which, in fact, is identical.

Table 3. Ranking of the responses to “*What do you need to do to have good physical fitness?*”

Response option	% of those who responded positively
To have active pastime, lead an active lifestyle	56
To adhere to a healthy diet, avoid overeating and hunger	48
To do sports, engage in physical activities, participate in competitions	47
Get enough sleep	38
Follow a healthy lifestyle	26
Break bad habits	24
Other	2.3
It’s hard to answer	3.7

Finally, when answering the question “*Do you think physical training and sports contribute to health promotion?*”, 93 % responded positively (65 % of them noted the absolute importance, and 28 % gave the answer “*rather yes*”).

Thus, it can be concluded that physical training and sports are of great importance for maintaining and strengthening the health of cadets, and, consequently, for the qualitative development of future specialists of the national guard of the Russian Federation.

The obtained data allow predicting the optimal potential of physical abilities of cadets for their further self-realization. Cadets have adaptive and compensatory systems of the organism, which include an increase in physical development indicators due to the regular practice of applied sports. With engagement in physical training and sports, socialization and adaptation of the cadet's personality takes place faster and more effectively.

CONCLUSIONS

The results of the research can serve as a basis for designing programs of supplementary education in physical training and sports in order to socialize cadets in the modern educational process according to the new state standard, according to which, physical training and sports are divided into basic and applied. In applied physical training, a special role is attached to the sports selected by the cadet. This, in turn, leads to a complex effect of the department of physical training and sports on the personality of the cadet, especially through independent sports and mass work of cadets. These results show and prove the possibility of developing applied sports as a form of supplementary education in the military institute for cadets, and through it, gaining their social space with the help of active physical training and sports as with a "Social Elevator".

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