

INFLUENCE OF NATURAL FACTORS IN THE PROCESS OF STUDENTS' PHYSICAL EDUCATION AND SPORTS ACTIVITIES

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Abstract. *This article discusses environmental factors affecting physical education and sports, scientific views, negative effects of mankind on ecology and environment. The need to pay more attention to the relationship between ecology and sports, these relationships are mutual, on the one hand, a person actively influences his environment through sports, physical exercise, using sports facilities, holding sports competitions, and on the other hand, the impact of nature on the human body, the athlete's health, safety, environmental and Scientific opinions about the dependence on the environment and condition are given.*

Keywords: *sport, physical culture, human, health, ecology, environment, problem, attitude, greenhouse effect, intensification, radioactive substances, climate change.*

In the **introduction** of the topic, the physical health of a person depends on four main factors: lifestyle, biological factors, natural-geographical conditions and the ecological state of the environment. We can assume that the only subjective factor affecting the health of people living in different cities of our republic is the environmental factor.

We pay special attention to the theoretical aspects of the article, students living in different regions and cities were taken as participants in the pedagogical experiment we conducted. Students studying in higher educational institutions of Tashkent city, Chirchik city of Tashkent region, Fergana city and Nukus city of the Republic of Karakalpakstan were involved in experimental and control groups. The distance between these cities varies and they are located in different geographical areas. For example, the cities of Chirchik and Fergana are 250-300 km apart, the distance between Chirchik and Nukus is 1200-1300 km, and the distance between Fergana and Nukus is 1500-1600 km. When comparing the difference in health, physical fitness and functional indicators of students studying in higher education institutions in these regions, involved in the pedagogical experiment, natural climate, geographical conditions and ecological environment can be taken into account as factors affecting them.

The uniqueness of the factors and conditions affecting the health and lifestyle of the population lies in the nationality and general ethnic and cultural characteristics of the students involved in the experiment.

Subjects have a similar standard of living, which consists of:

- The level of physical education and sports and medical science in the territory of our republic;
- working conditions - in our case, educational conditions (in HEIs);
- rest;
- housing, living conditions (income level does not depend on this);
- food (similar products);

- environmental protection (provided in the Constitution of the Republic of Uzbekistan and a number of social laws and regulations on nature protection).

Based on the above, focusing on **practical aspects**, the level of economic formation and development of producers and lifestyle are not taken into account as a factor affecting differences in the state of health and physical fitness of subjects. Therefore, one of the important factors affecting these indicators is the ecological condition of the environment.

Due to the influence of environmental factors, it is very difficult to diagnose the initial conditions of diseases.

Because of this, we can see that there is no boundary between disease and exposure to chemicals, for example, exposure to infectious diseases, and between them, in most cases it is very difficult to associate certain symptoms or syndromes with specific chemicals, especially since some chemicals have different biological effects (lead - various chronic toxic effects) are considered to have.

On the other hand, the human body has a certain limited set of responses to such effects, because many clinical manifestations of diseases can be caused by the effects of not one, but a number of chemical substances, and the organism responds to the effects of natural environment and environmental factors with a single holistic response.

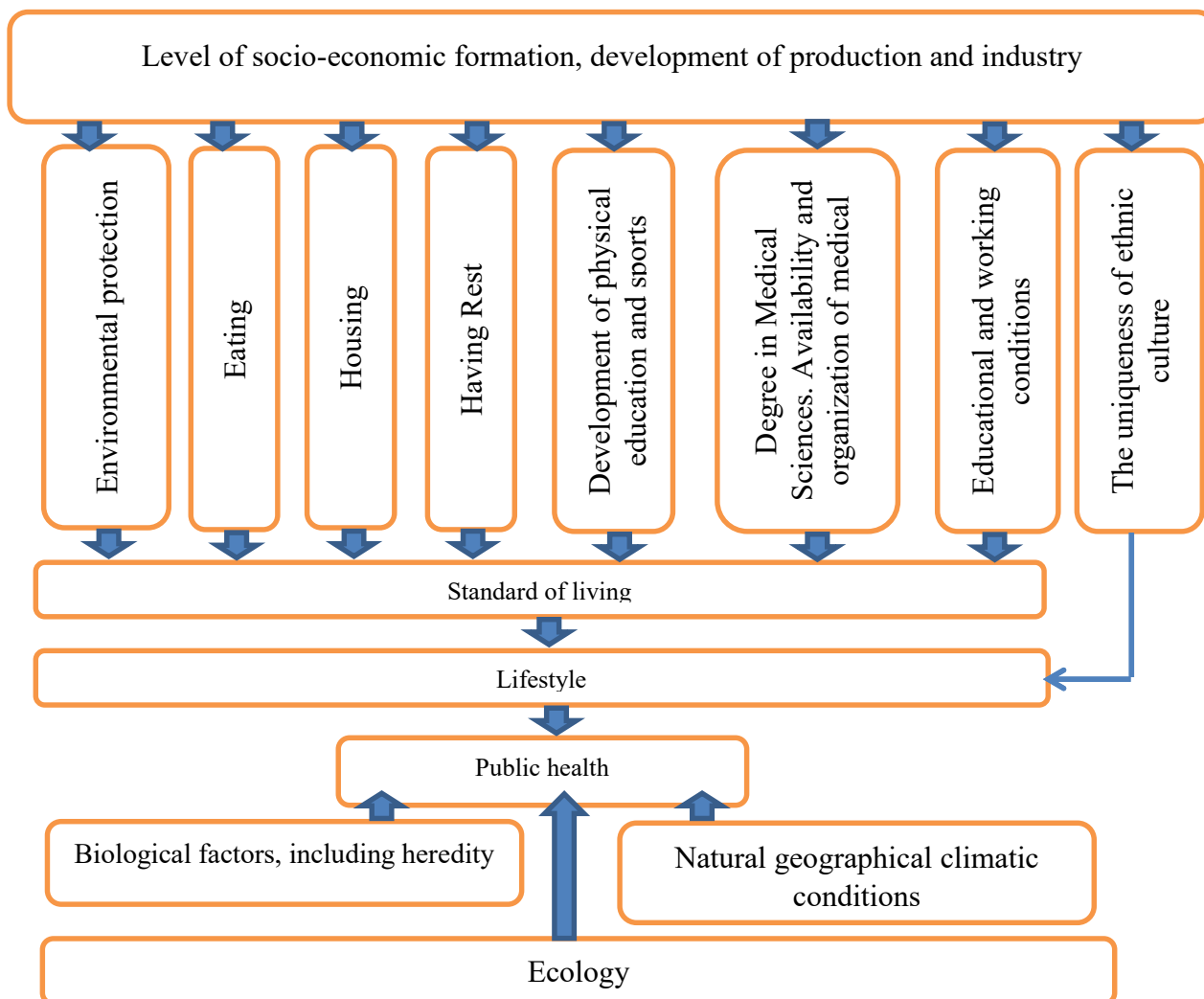


Figure 1. A model of the impact of various environmental factors and environmental conditions on students' health

Perhaps, unlike the disease, the same general mechanisms of adaptation of the organism to the influence of environmental factors are associated with the reaction of the organism, while the pathological process is associated with its specific localization in the organism. So, the body's adaptation mechanisms to various factors allow the body to adapt to one factor and increase its resistance to all other factors.

In this study, a model of the influence of various environmental factors and environmental conditions on students' health was developed.

The functional state of the body can serve as an indicator of the negative impact of the environment on the health of the population.

1. State of respiratory functions:

- the effect of low concentration of chemical substances on breathing is observed along with changes in various organs, including lung damage (respiratory tract damage, formation of lymph nodes around vessels and bronchi, pneumosclerosis of lung tissue);

- mandatory (defined as full under the condition of increase in maximum breathing) respiratory volume allows to fully assess the respiratory reserves of the lungs, and in case of its violation, distinguish bronchial permeability violation (obstructive pathology) and curcion of the lungs (restrictive pathology);

- to focus on violation of bronchial permeability when studying the effects of air pollution on health;

- respiratory functions of boys are higher than girls.

2. State of immunological reactivity:

- the speed of the change of the protective reaction depends on the specific characteristics of the biological effect of substances that poison the body;

- intensity and duration of effects.

Most studies on the effects of environmental factors on population health are based on: demographic indicators; illness or physical development.

In the growth of these diseases in cities, the social factor, population density and environment, in particular air pollution, are of primary importance. These factors are considered causative rather than etiological (causes of the disease), which makes it difficult to study each of them.

An increase in environmental pollution with heavy metals always leads to an increase in morbidity. If, as the general pollution index of the soil cover surface increases, respiratory diseases, flu, catarrh of the upper respiratory tract; there is an increase in duration of illness with nasopharyngitis, pharyngitis, acute tonsillitis.

Adaptation of a person to a new natural environment and industrial conditions can be briefly described as a set of socio-biological characteristics necessary for an organism in an ecological environment.

Students living in regions with adverse environmental conditions under the conditions of atmospheric air pollution, the stress of adaptive and regulatory processes in the activity of the cardiovascular system increases, both at rest and after exercise, functional and structural changes in the activity of the heart increase.

In many countries of the world (England, Bulgaria, Hungary, Germany, Poland, Russia and the CIS republics, the USA, France, Japan, etc.), 10% to 30% of urban and rural residents living

in areas with high economic potential have allergic diseases and environmental and in economically poor regions, these figures are 50% and more.

According to the World Health Organization, along with the widespread spread of allergic diseases, an increase in the death rate due to common diseases such as bronchial asthma, anaphylactic shock, and acute toxic-allergic reactions is observed.

There is reliable information about the effect of environmental pollution on the duration of diseases. Therefore, students living in polluted areas are 2-2.5 times more likely to suffer from respiratory diseases. According to American scientists, during an influenza epidemic, the average number of diseases increases by 20% in cities with a low level of pollution, and by 200% in cities with a high level of pollution. Also, in cities with high levels of air pollution, the average rate of morbidity is, for example, 41% for respiratory diseases, 132% for diseases of the cardiovascular system; 76% - for skin diseases and 35%.

Many studies conducted in recent years show that children living in areas with high air pollution have a low level of physical development and their development is often assessed as inconsistent. Biological age is estimated by a set of indicators: physical development (height, weight, etc.), ossification conditions of the skeleton ("bone age"), maturity level, etc. are calculated.

The purpose of physical education in HEIs is to help prepare well-developed, highly qualified specialists. Solve several tasks in the course of education in the direction of P.E and S at the Higher Education Institution. work is envisaged, one of which is the physical training of students. As a result of physical training, indicators of physical fitness are shown. The higher the level of development of strength, endurance, speed, agility and the stronger the human health, the richer the movement skills, the better his special training can be carried out. The level of health and physical fitness is one of the most important conditions for the quality of work of future specialists.

Regular study of physical development and fitness of students allows to determine the impact of planned training sessions on JT and S on the growth of physical development and fitness.

The level of physical fitness of the students of ODJTSU, TDTU, FarDU and ODJTSU Nukus branch was considered according to the results of mandatory tests included in the educational program of higher education institutions:

- cycle speed test (100 meter run);
- endurance test (pulling on the turnstile);
- general endurance test (running for 2000 meters);
- a test to check tension (explosive) strength (long jump);
- bending and straightening arms while resting on the floor (times);
- standing triple jump and long jump (cm)
- flexibility test (standing forward bend).

In order to assess the level of physical fitness of young people enrolled in the 1st year of FarDU, we researched the results of control exercises in the last four years on three indicators: speed, power endurance and general endurance (Fig. 2.1.1-2.1.2-2.1.3). Analyzing the results, the following can be noted: firstly, the physical fitness of students enrolled in the 1st year of OSPESU, TSTU, FarDSU and OSPESU Nukus branch (from 2019 to 2022) has decreased in all indicators: 100 meters, horizontal bar, 3000 meters running, This is in line with the data of various researchers

who have shown that the health and general physical fitness of school students across the country, that is, future students, is deteriorating.

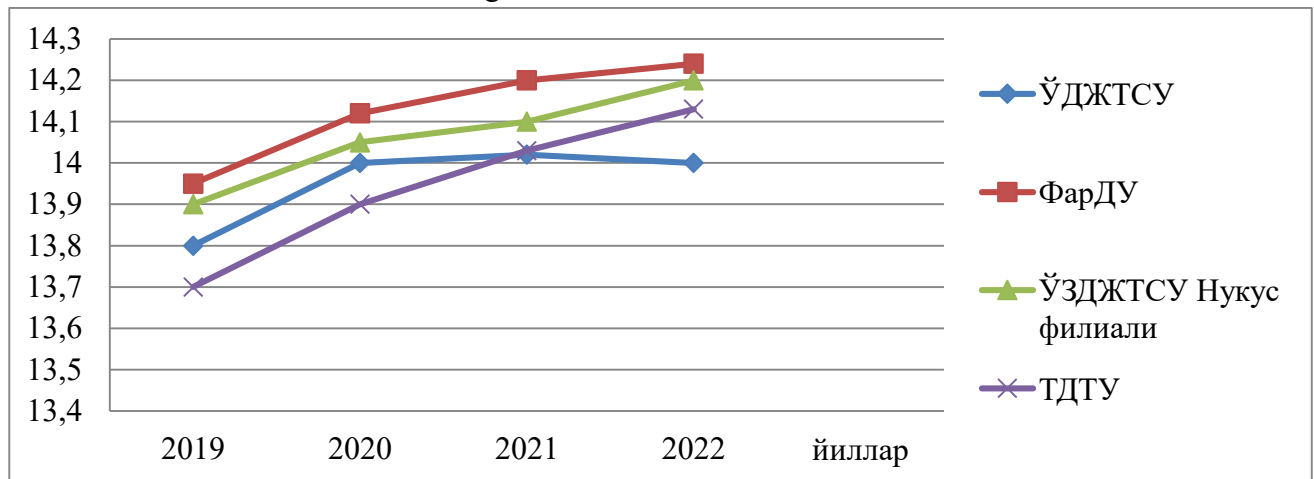


Figure 2.1.1. 100 meter run

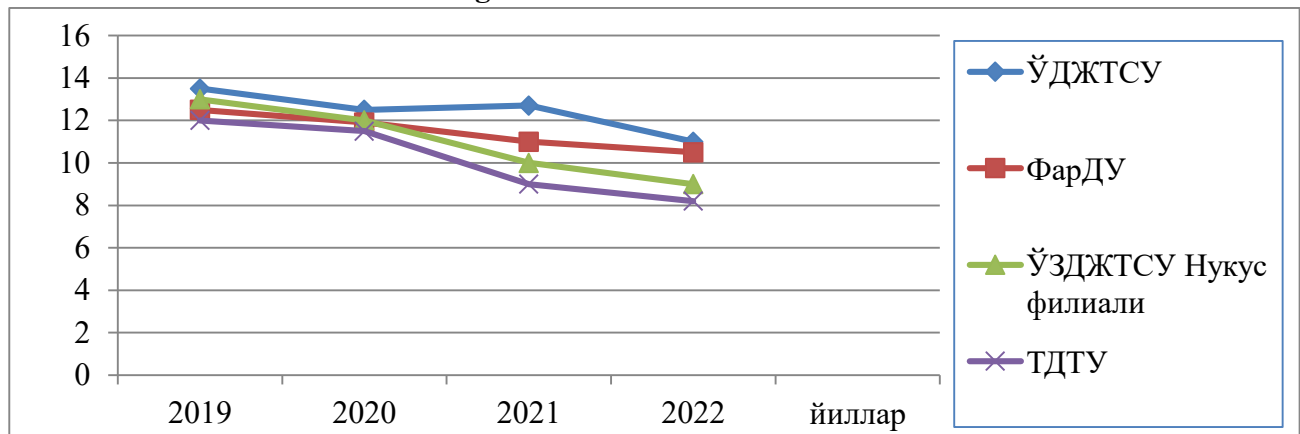


Figure 2.1.2. Pull-ups on the turnstile

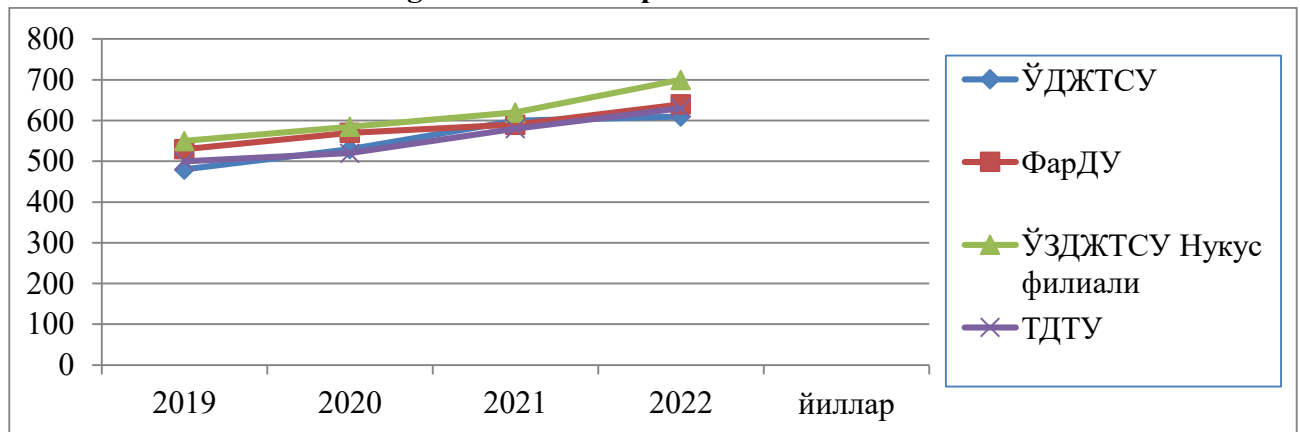


Figure 2.1.3. 2000 meter run condition

Figure 2.1.1-2.1.2-2.1.3. From 2019 to 2022, the diagram of the level of physical fitness of 1st-year students enrolled in USPESU, TSTU, FarSU and USTSU Nukus branch (with a selection)

Secondly, the average results of the students enrolled in the 1st year of USPESU are lower than the average indicators for the university, except for the results of the horizontal bar.

For the purpose of analysis, the data of medical supervision of students and the results of supervision at the beginning of the 1st year were used.

The following conclusions can be drawn from the analysis of the changes in the physical fitness of the students of USPESU during the two years of study: firstly, during the study period (from 2019 to 2022), the dynamics of the indicators of physical fitness of the students have a changing appearance, and there are even negative dynamics in some indicators. In general, comparing the results of the test norms shown at the end of the 2nd year with the indicators at the beginning of the 1st year, it can be seen that the average physical fitness indicators (speed, general endurance and power endurance) have grown with confidence. Secondly, especially since 2020, there is a tendency to decrease test results in absolute units at USPESU. Comparing the average results of the control exercises shown by the students of USPESU in the 2020-2022 academic years, it can be said that the general level of physical fitness is becoming lower than the general level for the university. In this case, there is no convincing increase in speed and general endurance indicators during the two-year study.

From the conducted scientific and practical research, it became known that the following conclusions can be drawn from the analysis of changes in the physical fitness of students during two years of study: firstly, during the study period (from 2019 to 2022), the dynamics of physical fitness indicators of students has a variable appearance, and in some indicators even negative the presence of dynamics was also highlighted. Comparing the results of the test norms at the end of the 2nd year with the indicators at the beginning of the 1st year, it can be seen that the average physical fitness indicators (speed, general endurance and power endurance) have grown with confidence. Secondly, especially since 2020, there is a tendency to decrease the test results in absolute units at USPESU. Comparing the average results of the control exercises shown by the students of USPESU in the 2020-2022 academic years, it can be said that physical fitness is becoming lower than the general level of the university. In this case, there is no convincing increase in speed and general endurance indicators during the two-year study.

On average, there is a decrease in the number of first-year students who passed university standards with 3 points and above.

So, in conclusion, by comparing the average results of HEIs, the following can be said:

1. In 2022, the number of students who were able to fulfill the 100-meter running control norms for the 1st course of USPESU focused on the development of speed qualities, showed a significant decrease compared to 2019, i.e. by 24 and 11.5%, respectively.

2. We can see that the percentage of students who fulfilled the normative requirements in the 2000-meter run aimed at developing endurance qualities is regularly low, i.e. (65.4% at USPESU, 60.5% at TSTU, 52.6% at FarSU and 49.3 at USPESU Nukus branch %), which indicates that the level of physical fitness of school graduates is insufficient.

3. The results of comparing the level of physical fitness of first-year students of USPESU with the 1st-year students of TSTU, FarSU and USPESU Nukus branch of the university in 2022 show that their endurance and strength training are almost at the same level, except for the aspect of speed, and this characteristic is the indicator of the students of TSTU, FarSU and USPESU Nukus branch who rated the standard as "satisfactory" and higher is 12.3% higher.

Therefore, if the above-mentioned requirements and ideas aimed at increasing the effectiveness of PE and S training are used in the process of continuous education, it would be a great contribution to the growing generation to become a well-rounded, high-educated, capable, patriotic person who loves his motherland and country.

REFERENCES

1. Belyaev V. S. Zdorove, ecology, sports. - M.: Sovetsky sport. - 1995. - 176 p.
2. Mukhammadiev K.B. Theory and practice of training students to be careful with the environment / study guide. - Tashkent: "Science and Technology", 2014. - 170 p.
3. Mukhammadiev K.B. Ecovaleological possibilities of preparing students for environmental care / methodical manual. - Tashkent: "Science and Technology", 2014. - 199 p.
4. Mukhammadiev K.B. Effectiveness level of preparing students for environmental care during physical education. - Tashkent: "Fan-sport". Scientific-theoretical magazine. 2015. No. 2. - 31-36 p.
5. Mukhammadiev K.B. Development of careful attitude of students to the environment during physical education. Doctor of Philosophy (PhD) in Dis...ped.Science. – Chirchik: 2018. – 137 p.
6. Mukhamadiev K.B. Theoretical foundations of increasing the effectiveness of the physical education process and the development of environmental culture among students: Monograph / "Innovative Development Publishing House". - Tashkent, 2021. - 413 p.
7. Turdikulov E.O., Turdikulov U. Development of environmental education in Central Asia. - Tashkent .: "Fan", 2005. - 504 p.