



Influence of the "immobility" factor on the levels of physical fitness and the state of health of students

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Abstract

Objective of the study was to determine the impact of the "immobility" factor (due to the two-year period of online learning due to the COVID-19 pandemic) on the indicators of physical fitness and the health status of students.

Methods and structure of the study. A comparative analysis of indicators of physical fitness and health status of 1st-3rd year students of 20 faculties and institutes of the National Research Tomsk State University was carried out in the pre-pandemic period (2019), as well as after its completion and the return of students to full-time education in the disciplines "Physical culture and sports" and "Elective disciplines in physical culture and sports" (2022).

Results and conclusions. As the results of the study showed, the factor of forced "immobility" of students during the two-year period of study had a negative impact on the motivational sphere of students (men and women) in relation to physical culture and sports activities. Thus, in the first semester of the 2022-2023 academic year, the attendance of classes in the academic disciplines "Physical Culture and Sports" and "Elective Disciplines in Physical Culture and Sports", which were held in accordance with the schedule, decreased by 20% in general. And the quantitative indicator of the participation of NR TSU students in sports events decreased by almost one third, compared with the pre-pandemic period of study [4].

The low level of students' physical fitness is also confirmed by the results of testing the standards of the GTO complex.

Keywords: *physical fitness, immobility, psychophysical state, online training, COVID-19 pandemic, levels of*

Introduction. At present, despite the measures taken by the Government and the Ministry of Sports of the Russian Federation, the levels of health and physical fitness of the population remain at a rather low level, and the protracted pandemic associated with the spread of coronavirus infection - COVID-19 has also contributed to the intensification of the decline in indicators.

This problem has not bypassed the student youth, whose level of physical activity in 2020-2022, according to various sources, has decreased to 40%. This could not but affect, in a negative way, the psychophysical state of the students.

Objective of the study was to determine the impact of the "immobility" factor (due to the two-year

period of online learning due to the COVID-19 pandemic) on the indicators of physical fitness and the health status of students.

Methods and structure of the study. The scientific work was attended by students of 1-3 courses of 20 faculties and institutes of the National Research Tomsk State University, studying in the disciplines "Physical culture and sports" and "Elective disciplines in physical culture and sports" (about 13,000 people). In 2019-2023, after the end of the spring academic semesters, control tests were conducted, based on the results of which the levels of physical fitness of students (men and women) were assessed, and then a comparative analysis of the study materials was carried out. In addition, quantitative indicators of the state



of health of students, two previously indicated periods of study, the results of physical culture and sports activity, indicators of passing the standards of the GTO complex, etc. were also subject to comparison.

Results of the study and their discussion. Comparative analysis of the results of the control testing of physical fitness of students from 20 faculties and institutes of the National Research Tomsk State University, which was conducted in 2019-2020, before the start of the pandemic, and in 2022-2023 (the first semester) after its completion, made it possible to identify an unambiguous trend in changes in indicators of the development of physical qualities and assess the impact on their levels of negative factors associated with forced and prolonged "immobility" (*due to distance learning, which led to a decrease in motor activity, as it was noted earlier*) of students.

As a confirmation, we present the indicators of the development of physical qualities among male students of the first three years of study. Thus, the level of strength development among students of the 2022-2023 academic year (average statistical values) compared to their predecessors of the 2019-2020 academic year turned out to be lower by 14.1%, speed by 8.7%, endurance by 3.4%, speed - strength qualities by 5.6%. And the highest percentage of the lag was recorded in the development of flexibility, which amounted to more than 30%. As you can see, according to none of the indicators of physical development, modern students did not have advantages with their earlier predecessors, the pre-pandemic period of full-time education.

A similar downward trend in physical fitness indicators was noted among female students of the 2022-2023 academic year, compared with their fellow students of the 2019-2020 academic year. The only difference is that the advantage, in almost all indicators, of the development of the physical qualities of female students who studied full-time before the pandemic, compared to their colleagues who started practical physical exercises after it ended, was even more impressive compared to students men.

This is convincingly confirmed by the results of testing the levels of development of physical qualities of female students, two compared periods of study.

In the control exercises to assess the development of speed, the indicators of female students who started physical exercises in 2022 turned out to be lower than their classmates of the pre-pandemic period of training by 8.5%, endurance and strength by 21% in

both cases, speed-strength qualities by 8.2%. As well as in men, the largest level of decline in the indicator was noted among female students of the 2022-2023 academic year in the development of flexibility, which reached 34.5%.

The factor of forced "immobility" of students during the two-year period of study at the university played a negative role not only in reducing their physical fitness indicators. Unfortunately, it also had a corrupting effect on the motivational sphere of students (men and women) in relation to physical culture and sports activities. Thus, in the first semester of the 2022-2023 academic year, the attendance of classes in the academic disciplines "Physical Culture and Sports" and "Elective Disciplines in Physical Culture and Sports", which were held in accordance with the schedule, decreased by 20% in general. And the quantitative indicator of the participation of NR TSU students in sports events has decreased by almost one third compared to the pre-pandemic period of study [2, 3].

In turn, an insufficient level of motor-muscular activity does not allow for the development of physical qualities and does not contribute to the successful completion of the standards established by the program.

This is confirmed by a comparative analysis of the results of testing the physical fitness of students of the first three years of 20 faculties and institutes of the National Research Tomsk State University in 2019 and 2022.

In 2019, 37% of students successfully passed the established standards with grades "4 and 5", and in 2022 their number decreased to 30%. In general, out of the total number of students studying at the National Research Tomsk State University in the disciplines "Physical culture and sports" and "Elective disciplines in physical culture and sports" in 2019-2022 65% and 58% of students, respectively, successfully passed the established standards.

The low level of physical fitness of students is also confirmed by the results of testing the standards of the GTO complex (*since 2015, the Center for Methodological Training and Testing of the Ready for Labor and Defense complex has been operating at NR TSU*). From 2015 to 2019 period, 555 students took part in the delivery of the standards of the GTO complex. Of these, distinctions were received: gold badge - 2, silver - 8 and bronze - 6 students (total: 16 people, about 2.9%).

In recent years, the situation has changed some-



what for the better, but the rate of increase in those who have successfully passed the GTO standards leaves much to be desired. As of 03/01/2023, the number of students who took part in passing the standards was 716. The insignia were received by: a gold badge - 25, a silver - 15 and a bronze - 14 students (total: 54 people, about 7.5%).

Comparative analysis of the results of medical examination of students of the first three years of 2019 and 2022 training, the results of which determined the medical group, confirm that the situation over the past three years with the state of physical health of students has practically not changed for the better. This is also confirmed by the results of a medical examination of 7779 students covered by physical education in 2022, which showed that the number of people exempted from physical exercises (chronic diseases) was 265 people (3.4%) referred to the group of therapeutic physical culture (exercise therapy) - 1128 people (14.5%), special medical group (SMG) - 1274 (16.4%), preparatory and main groups (PMG) 5112 (65.7%) [1].

The indicators of the medical examination of 6297 students of the 1st-3rd courses in 2019 are as follows: the number of those released is 212 people. (3.4%), exercise therapy - 532 people (8.4%), SMG - 1107 people (17.6%), PMG - 44446 people (70.6%) respectively.

Given the data obtained, at present, one of the main tasks of physical education at the university is to restore the physical condition and health of students to the pre-pandemic level, and only after that it will be possible to set new tasks. And for the successful implementation of the goal, it is necessary to return student youth to sports halls, stadiums, swimming pools, etc. And in order for students to once again have a desire to engage in physical exercises, comfortable conditions for classes and the creation of opportunities to more fully satisfy their physical culture and sports interests are necessary, compared with the pre-pandemic period of study. Moreover, this problem, especially at the present time, must be addressed comprehensively, that is, the entire system of physical education of the Russian Federation, starting

with preschool organizations and institutions, secondary schools and ending with the system of higher professional education and other educational structures, where physical education and professionally applied physical training are compulsory subjects.

Conclusions. Thus, a comparative analysis of the levels of physical fitness of students of the 1st-3rd courses of study, two compared periods of study, showed a clear, significant ($p < 0.05$) decrease in the indicators of the development of physical qualities (for men and women), in 2023 by compared to 2019 training. In general, the cumulative indicator of the decline in the development of basic physical qualities in men was 12.36%, in women - 18.64%.

The negative trend was manifested not only in the development of physical qualities of students. Also, in general, the level of physical culture and sports activity shown by students during extracurricular time, on holidays and weekends, decreased by about 30%. The number of students who passed the established standards with grades "4" and "5" decreased by 7%, and the number of students who successfully passed all the standards established by the program as a whole decreased by 7%.

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