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**EFFECTIVENESS AND INFLUENCE ON STUDENTS OF SPECIFIC
VACCINATION AGAINST COVID-19 AND INDIVIDUAL PROTECTION
MEANS**

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Abstract: According to the statistics more than 514 million SARS-CoV-2 infections have been reported worldwide so far. COVID-19 was detected in almost 5 million Ukrainians, with lethal effect for 112,000 patients [1].

Therefore, given the relevance of COVID-19, it was decided to conduct a study to assess precautionary measures, prevention and vaccination (depending on the type of vaccine and frequency of injections), their impact on infection and disease.

To achieve this goal, a GoogleForms questionnaire was created.

The results of the analysis showed that students who followed anti-epidemic measures had a significantly lower risk than those who neglected them. According to this study, the vaccines, reducing the risk of disease in the most effective way, are CoronaVac and Pfizer.

The greatest efficacy in facilitating disease transmission was found after vaccination with CoronaVac and AstraZeneca.

Key words: COVID-19, vaccination, CoronaVac, Pfizer, AstraZenec, Moderna, vaccination, recovery, morbidity, patients, students, respondents, dosage, six month period, a month period.

The severe consequences of the COVID-19 pandemic are determined not only by high mortality, but also by side effect on the nervous and cardiovascular systems, exacerbation of chronic comorbidities after the disease.

The introduction of quarantine measures in the country affected public life, mental and physical health of all the population groups. Pandemics and quarantine had a greater impact on emotional and social development of young children and adolescents than adults. Severe psychological states of increased irritability, inattention and aggressive behavior were found in all children regardless of their age groups [2]. Myopia in East Asian children has already been considered an international problem [5]. The number of Japanese children with poor visual acuity is also increasing [6]. Thus, there is great concern about the impact of these pandemic lifestyle changes on myopia in children [7]. The nationwide closures of educational institutions has affected negatively more than 91% [3] of students worldwide. Home “imprisonment” of young people, associated with uncertainty and anxiety, reduced their education, physical activity and opportunities for socialization [4].

The aim of this study is to evaluate the precautionary measures, prevention and vaccination (depending on the type of vaccine and frequency of injections), their impact on infection and disease. To achieve this goal, a GoogleForms questionnaire was created. The survey was conducted among students of higher educational institutions in Dnipro. The number of respondents was 105 people. The questions of the questionnaire were divided into the following groups: students' awareness of COVID-19 prevention measures, health status, COVID-19 vaccination and the disease itself (namely health, type of diagnosis and other issues). The analysis of the obtained data was performed using the methods of descriptive and analytical biostatistics using the software JupyterNotebooksoftware (<https://jupyter.org/install>).

The data showed that 95.5% of students prefer protective masks or respirators as a measure to prevent the disease, 76.2% of respondents use disinfectants, 53.3% wash their hands with soap for 20 seconds or more. Respondents avoid shaking hands and traveling on public transport less often - 12.4 percent of respondents and only 5.7% wear disposable gloves.

Among the most common sources of information, 84.8% of respondents chose the Internet news (often on social networks), three times fewer students are less likely to seek information in medical institutions, including the family doctor (28.6% of respondents).

Since the beginning of the epidemic in Ukraine, 43.8% of students had symptoms and a confirmed diagnosis, 65.9% had a suspicion of the disease but were not examined, 23% suspected a disease but the diagnosis was not confirmed, and 10.6% had a confirmed diagnosis, but there were no symptoms. 88.5% of respondents fell ill, most of them had combined symptoms, 30.0% of respondents had no side effects and complications, 31% had insomnia, irritability, anxiety, memory impairment, 28% noticed shortness of breath, cough, palpitations, fast or pounding heartbeat, 23% suffered pain in bones and muscles in addition to weakness and stiffness.

The majority of surveyed students (84%) were vaccinated. After vaccination with the first dose, 6.25% of students fell ill within a month, 3.75% got infected within 1.5-3 months after being vaccinated with two doses and 7.5% of students caught virus within six months after being vaccinated with two doses.

Among those not vaccinated there were 15 people who did not get infected, most likely because they had acquired immunity after contracting COVID-19. The BioNTech, Pfizer vaccine was chosen by 50.5% of vaccinated students. Among them, 86.7% of students did not fall ill within six months, correspondingly, 13.2% fell ill. Almost one-fifth of respondents were vaccinated with CoronaVac, namely 19.0%. Among those vaccinated, 90% of young people did not get sick within six months, only 10.0% got infected.

Moderna vaccine was preferred by 10.4% of respondents, among whom there were almost the same rates among the sick and healthy ones for six months (45.4% and 54.4%, respectively).

Oxford, AstraZeneca vaccine was used to vaccinate 5.7% of people, 83.3% of those vaccinated with two doses did not get sick for six months, only one student (16%) vaccinated with one dose of the disease got infected within a month.

A comparison of the effects of vaccines on the incidence and course of the disease showed that Moderna is the least effective, as 45.5% of respondents fell ill within six months after vaccination. The most effective among the respondents is the CoronaVac vaccine, as a result of which only 10% of respondents fell ill after vaccination within six months. Almost the same figure (13.0%) was obtained for Pfizer vaccine, which also indicates a high degree of protection against the disease for six months as a result of its application.

At the same time, the health of patients who got infected after vaccination and the severity of the illness must also be taken into account. Thus, analyzing the recovery intensity of patients who got infected after vaccination with two doses, we can claim that the largest number of people who needed 2-3 weeks for recovery is the group vaccinated with Moderna (18.1%), followed by Pfizer 7.5%), the third in rating is CoronaVac (5.0%). In addition, it took those, vaccinated by Pfizer 1-1.5 months to recover from the disease, which accounts for 4.0% of the total vaccinated population.

Conclusions. According to the survey, students who followed anti-epidemic measures have a significantly lower risk of getting infected than those who neglected them. Vaccination reduces the risk of infection by more than three times. The most effective vaccines to reduce the risk of disease, in accordance with this study, are CoronaVac and Pfizer.

The greatest efficacy in facilitating suffering from disease symptoms was researched and determined after vaccination with CoronaVac and AstraZeneca.

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