

## **РОЗДІЛ 2. БІОЛОГІЧНІ ТА МЕДИЧНІ АСПЕКТИ ЗДОРОВ'Я ЛЮДИНИ**

### **IMPACT OF COVID-19 PANDEMIC ON MENTAL HEALTH AND HEALTH BEHAVIORS IN UKRANIAN ADOLESCENTS**

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**Introduction.** The COVID-19 pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is of a scale not seen since the 1918 influenza pandemic. Today in Ukraine and the world, although the predominant clinical presentation is with respiratory disease, neurological manifestations are being recognised increasingly. Anxiety, depressive disorders and suicides among people of all ages who have suffered from COVID-19 have recently increased. These features appear to be a combination of non-specific complications of systemic disease, the effects of direct viral infection, or inflammation of the nervous system and vasculature, which can be para-infectious or post-infectious. Being in isolation is a serious psychological overload for children and adolescents, which can affect the state of their nervous system.

**The study aimed to** compare the psychological and physical health of school students who suffered from COVID-19 and those who were not infected.

**Methods.** The research was conducted at the Khmelnytskyi lyceum 17 (Khmelnytskyi, Ukraine). The project participants were 60 school students of both sexes from 8th to 11th grade who suffered from COVID-19 or those who were not infected, with appropriate inclusion criteria: written consent of students to participate in the study; no history of chronic diseases; the persons' ability to adequately cooperate in the research process. According to the results of the survey and enzyme-linked immunosorbent assay of the studied adolescents, they were divided into two groups: I – control (no immunoglobulins (Ig) M and G to SARS-CoV-2) and II – those who carried COVID-19 (high titer of Ig G to SARS-CoV-2). The levels of Ig M and G to coronavirus SARS-CoV-2 were determined in blood with the ELISA method. There were 30 people in each group. Surveys, questionnaires (Psychological general well-being index (PGWBI)), blood pressure measurements, and rheoencephalography were performed to assess the psychosomatic health of adolescents. The study of the presence of psychosomatic diseases of schoolchildren was carried out using the Toronto alexithymia scale.

**Results.** When comparing the test results, it was found that

there are more students in the risk zone of group II than in the risk zone of group I. The data indicate the presence of background problems in almost 20% ( $p < 0.05$ ) of students, which is most likely due to chronic fatigue, inactivity and gadget abuse. In group II adolescents had a more pronounced tendency to irritability and depression also had a significantly lower average PGWBI index by 15% ( $p < 0.05$ ). Also, adolescents of group II were diagnosed with angiospasm with moderate or significant asymmetry of arterial-capillary vessels without signs of intracranial hypertension, moderate to significant hypovolemia on the background of venous plethora in 17 of 30 students, which was 58.6% ( $p < 0.05$ ), in comparison with the control group, this figure was 6 out of 30 students (20%, ( $p > 0.05$ )). We did not find any significant differences between groups in blood pressure measurement. It was developed recommendations for the prevention of psychosomatic disorders due to coronavirus infection, namely, reducing the use of gadgets, increasing the time of reading books, and communicating with friends at online conferences.

**Conclusion.** The results of tests and rheoencephalography confirm the hypothesis of the possible impact of coronavirus infection caused by SARS-CoV-2 virus and pandemic on the development of psychosomatic conditions in adolescents and requires further serious study and monitoring of the medical system and reformatting educational technologies to preserve children's health and adolescents, as well as improving the efficiency of the educational process.

## **КОНЦЕНТРАЦІЯ ФАКТОРА НЕКРОЗУ ПУХЛИНИ-А У ХВОРИХ НА ГІПЕРТОНІЧНУ ХВОРОБУ ІІ СТАДІЇ**

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Інтервенційні та клінічні дослідження останніх десятиліть доводять зв'язок артеріальної гіпертензії (АГ) із запаленням [4, 5, 6]. Серед маркерів прозапальної активації провідну роль відіграє фактор некрозу пухлини-альфа (ФНП-а). Підвищені рівні ФНП-а асоціюється з ураженням органів мішеней при АГ [7]. Проте до сих пір ведуться суперечки, чи є він лише маркером захворювання, чи це значний етіопатогенетичний фактор гіпертонічної хвороби [1, 2, 3].

**Мета нашого дослідження:** визначити концентрацію фактора некрозу пухлини-а у хворих на гіпертонічну хворобу ІІ стадії.

**Об'єкти і методи дослідження:** в групу спостереження було включено 94 хворих на гіпертонічну хворобу ІІ стадії без клінічно значущої супутньої патології. Залежно від ступеня артеріальної гіпертензії (АГ) хворі були розподілені на 3 підгрупи: 1-ю