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MEDICAL STUDENTS' MENTAL HEALTH IN THE COVID-19 PANDEMIC

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Ключові слова: ментальне здоров'я, студенти-медики, анкета загального стану здоров'я, депресія, тривожність, пандемія COVID-19

Abstract. Medical students' mental health in the COVID-19 pandemic. Inshyna N.M., Chorna I.V. The COVID-19 pandemic has had a significant impact on the well-being, both mental and physical, of students worldwide. Medical students faced challenges in the educational process, including online education, uncertainty as for the terms of licensing exams, and limited practical experience. The present study aimed to compare the impact of the COVID-19 pandemic on the mental health of medical students from Ukraine, India, and African countries, focusing on the frequency of incidence of psychosomatic symptoms, anxiety/insomnia, social dysfunction, and depression. 230 students of the Academic and Research Medical Institute of Sumy State University were survey participants. The mental well-being of medical students was assessed using the General Health Questionnaire. The obtained data were analyzed using the statistical software

PAST v4.03. It was found that 60 % of students had mental health disturbances during the COVID-19 pandemic. Symptoms of depression were detected in 15% of medical students, psychosomatic symptoms in 34%, anxiety and insomnia in 47%, and social dysfunction in 65% of respondents. The main psycho-emotional disorder in most students was social dysfunction, which was associated with limited social activity during quarantine. It was found that students from India and African countries had a higher incidence of depression than Ukrainian students. Obviously, being away from home during a pandemic has an additional negative impact on the mental health of international students. The frequency of anxiety and insomnia was higher among Ukrainians than among foreign students. Changes in learning environments and concerns about personal and family health have contributed to heightened anxiety levels among Ukrainian students. It should be noted that with the transition to online learning and communication, students had to spend more time in front of screens, which could contribute to digital fatigue, disrupt sleep patterns, and negatively affect mental well-being. The results of the study provided valuable insight into the mental health challenges faced by medical students during the COVID-19 pandemic with regard to their nationality, highlighting the need for targeted psychological support interventions for students to improve their mental health.

Реферат. Ментальне здоров'я студентів-медиків під час пандемії COVID-19. Іншина Н.М., Чорна І.В.
Пандемія COVID-19 суттєво вплинула на благополуччя, як психічне, так і фізичне, студентів у всьому світі. Студенти-медики зіткнулись з низкою труднощів у навчальному процесі: перехід на онлайн-навчання, невизначеність щодо термінів проведення ліцензійних іспитів та обмежений практичний досвід. Це дослідження мало на меті порівняти вплив пандемії COVID-19 на психічне здоров'я студентів-медиків з України, Індії та країн Африки, зосереджуючись на частоті появи психосоматичних симптомів, тривоги/безсоння, соціальної дисфункції та депресії. У дослідженні взяли участь 230 студентів Навчально-наукового медичного інституту Сумського державного університету. Стан ментального здоров'я оцінювали за результатами анкети загального стану здоров'я. Статистичну обробку даних здійснювали з використанням програмного забезпечення PAST v4.03. Установлено, що 60% студентів-медиків мали погіршення стану ментального здоров'я під час пандемії коронавірусу. Прояви депресії були виявлені в 15% студентів, психосоматичних симптомів – у 34%, тривожності та безсоння – у 47%, соціальної дисфункції – у 65%. Найпоширенішим порушенням ментального здоров'я студентів-медиків була соціальна дисфункція, що зумовлено обмеженням соціальної активності під час карантину. Студенти з Індії та країн Африки мали вищу частоту проявів депресії порівняно з українськими студентами. Очевидно, віддаленість від дому в часи пандемії має додатковий негативний вплив на ментальне здоров'я іноземних студентів. Частота проявів тривожності й безсоння була вищою в українських студентів порівняно з іноземними. Зміни в навчальному середовищі та занепокоєння щодо особистого та сімейного здоров'я сприяли підвищенню рівня тривожності серед українських студентів. Слід зазначити, що з переходом до онлайн-навчання та спілкування студенти змушені були проводити більше часу перед екранами, що могло сприяти цифровій втомі, порушувати режим сну та негативно впливати на психічне благополуччя. Результати дослідження дали цінне уявлення про проблеми психічного здоров'я, які виникають у студентів-медиків під час пандемії COVID-19, з огляду на їхню національність, та підкреслили необхідність здійснення цілеспрямованих заходів щодо надання психологічної підтримки студентам з метою покращення стану їхнього ментального здоров'я.

The COVID-19 pandemic has affected the lives of people all over the world. Most studies in the field of COVID-19 have focused only on its damaging effect on human physical health. However, quarantine restrictions in pandemic have led to an increase in the number of people with manifestations of psycho-emotional disturbances, such as anxiety, depression, insomnia, loneliness, and hopelessness [1, 2].

Recent studies related to the COVID-19 pandemic have shown that young people aged 18–25 years are the most vulnerable to the impact of lockdown on emotional and psychological well-being [3, 4]. The pandemic changed traditional communication conditions for young people and forced them to adapt to a new environment with prevailing distance communication and study [5]. Studies by sociologists, have shown the importance of social communications for young people. Between the ages of 18 and 25, they should have more than 20 social interactions per day. Limiting social activity was a risk factors of mental

health disturbances during the COVID-19 pandemic. The impact of “distance living” to a greater extent affected the most socially active part of society, which led to the deterioration of mental health. The world confronted a global problem that needs constant monitoring and additional action. This is especially true for the students who will be in charge of population health in the future – medical students. Substantial research has been undertaken on the impact of COVID-19 on students’ mental health [6]. Previous research has indicated potential interrelations between students’ mental well-being during the pandemic and their gender and age. No known empirical research has explored the relationships between the citizenship of students and their stress response during the COVID-19 pandemic.

This study aimed to investigate the impact of restrictions caused by the COVID-19 pandemic on the mental health of medical students from Ukraine, India, and Africa to identify whether a potential

relationship exists between young people's citizenship and their psychological responses to stress.

MATERIALS AND METHODS OF RESEARCH

This descriptive cross-sectional study was conducted at Sumy State University, and the population included second- and fourth-year students of the Master's degree program in Medicine. The entire population (230 individuals, of whom 77 were from Ukraine, 83 – from India and 70 – from African countries) was selected as the research sample. To assess mental health status, the students were surveyed from January to November 2021.

Written informed consent was obtained from all participants prior to their involvement in the research. The students were explained the specifics of filling out the questionnaire and were assured that the results of the survey were anonymous and that the information provided by them would be kept confidential. The students had up to 5 min to complete the questionnaire.

The General Health Questionnaire-28 (GHQ-28) was used in this study [7]. The students compared their recent psycho-emotional state with their usual state. The questionnaire provided 4 answer options: A – «not at all», B – «no more than usual», C – «rather more than usual», D – «much more than usual» [8]. "A" and "B" were rated 0 points, "C" or "D" were rated 1 point [9]. The maximum score was 28. The higher the score, the worse the mental health state. A total score of > 8 (out of possible 28) was considered a manifestation of mental health disorders [10].

The General Health Questionnaire (GHQ-28) contains 4 domains of 7 questions each, directed at

the detection of physical symptoms (items 1-7), anxiety and insomnia (items 8-14), social dysfunction (items 15-21), and depression (items 22-28). A score of >8 (out of possible 28) and >3 (out of possible 7) was considered a manifestation of a mental health disorder.

The analysis of the obtained data was performed using the Microsoft Open Value Subscription program (a licensing agreement for Sumy State University V1409354) and the free statistical software PAST v4.03 [11] available at <https://softfamous.com/postdownload-file/past/18233/13091/>.

Qualitative variables were presented as frequency and percentage. Quantitative data were calculated and reported as mean and standard deviation (SD).

The present study was conducted in accordance with the principles of the WMA Declaration of Helsinki "Ethical principles for medical research involving human subjects" and the "Universal declaration on Bioethics and Human Rights" (UNESCO), and was approved by the Bioethics Committee to conduct experimental and clinical research at the Academic and Research Medical Institute of Sumy State University (protocol No. 1/6, June 2, 2023).

RESULTS AND DISCUSSION

A cross-sectional study was undertaken to explore the potential relationship between the disturbances in the mental health of medical students in the COVID-19 pandemic and their citizenship. This study involved 230 medical students from the Academic and Research Medical Institute of Sumy State University. The demographic characteristics of medical students is presented in Table.

Frequency and percentage (%) of responses as for demographic characteristics

Question	Answer	n	%
Gender	Male	106	46
	Female	124	54
Citizenship	Ukrainian	77	33
	Indian	83	36
	African	70	31
Academic year	2 nd year	140	61
	4 th year	90	39

The mean age of students was 20.4 (SD=1,1). The gender profile of medical students: 54% female (n=124: 41– Ukrainians, 46 – Indians, 37 – African

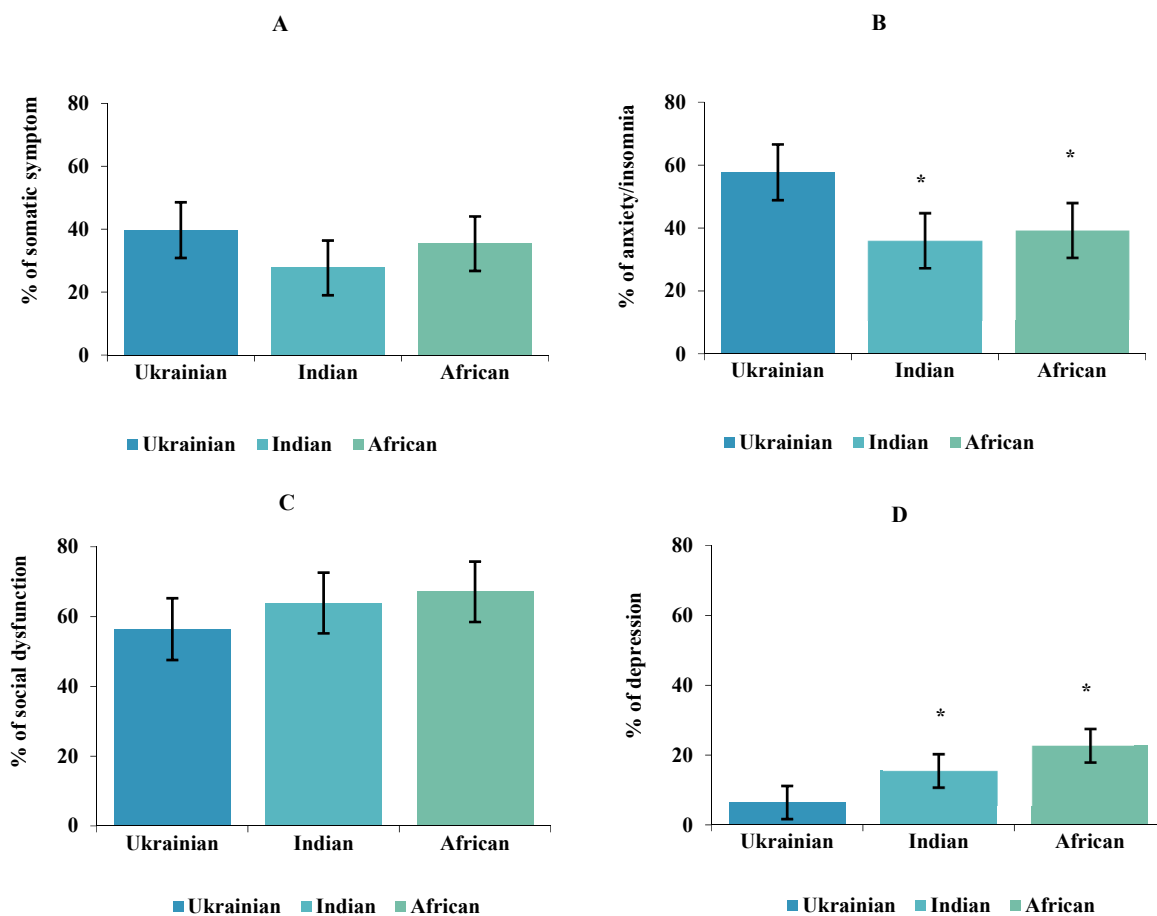
students) and 46% male (n=106: 36 – Ukrainians, 37 – Indians, 43 – African students).

This study identified that 60% of respondents had disturbances of mental well-being during the COVID-19 pandemic. With the GHQ-28 questionnaire, the average score of all students was 9 (SD=0.6). The findings showed that there was no significant difference in the frequency of mental health disorders between men (62%) and women (58%) as well as between students in the 2nd (60%) and the 4th academic years (61%).

Evidence is presented that the pandemic caused psycho-emotional disturbances in medical students. 15% of respondents reported depression, 34% reported psycho-somatic symptoms, 47% reported anxiety and insomnia, and 65% reported social dysfunction. The principal findings of this research are that most students experienced social dysfunction because of restrictions on their social life due to quarantine. The pandemic has disrupted traditional systems of training of medical students, particularly lecture classes in the auditorium, study in groups, and practical training at clinical departments. These disruptions may have eroded the sense of belonging and community that is crucial for maintaining social well-being, leading to social dysfunction.

Our study examined the relationship between citizenship and the psychological well-being of medical students during the pandemic COVID-19 (Fig.). The average GHQ-28 questionnaire score and prevalence of mental health disorders among students from Ukraine, India, and African countries were compared. The experimental data suggested that there was no significant difference in the mental health score among students of different nationalities. Results showed that the average score of the GHQ-28 questionnaire of students from Ukraine was 8.7 (SD=0,9), from India – 9.0 (SD=0,7), and from African countries – 9.2 (SD=1,1). The number of respondents with a total score of >8 was as follows: 62% of students were from Ukraine, 57% – from India, and 61% – from Africa.

The obtained results showed that social dysfunction was the most frequent psycho-emotional disorder in medical students. Probably, this was caused by limiting social interactions in terms of quarantine. The results of our study are consistent with the data of other studies: among medical students during the COVID-19 pandemic, social dysfunction was the most frequent and depression was the least common [8].



Frequency (%) of somatic symptoms (A), anxiety/insomnia (B), social dysfunction (C), and depression (D) among medical students (* – $p < 0.05$ compared to students from Ukraine)

Ukrainian students had the highest prevalence of anxiety and insomnia compared with foreign students. Despite spending more time in bed during the quarantine period, medical students' overall sleep patterns were noted to be impaired, leading to a high prevalence of poor sleep quality, exhaustion, behavioral changes, and lifestyle modifications. Concerns about the impact of the pandemic on future career prospects may have intensified stress and anxiety among future doctors. Students from India and African countries, studying away from home, had a higher incidence of depression than students from Ukraine. The results of this study support the view that distance from home and family during the pandemic is an additional stressor for Indian and African students. The increased risk of developing stress-related mental disorders such as depression and anxiety during quarantine restrictions may negatively affect medical students' academic and clinical performance (e.g., reduced levels of empathy).

The COVID-19 pandemic can indeed cause significant mental trauma on a global scale. Nervous stress, social isolation, loss of loved ones, the prospect of illness or the loss of a loved one, and economic instability can all seriously affect mental health. Consequently, the spread of various mental diseases may increase and exacerbate existing mental problems. Seeking help with mental illness is still considered a stigma in society. Note that mental illnesses are strongly stigmatized not only within the general population but also among doctors and students of medical institutions. Therefore, it is essential to raise awareness and provide adequate support and resources to reduce the potential impact of mental trauma caused by the COVID-19 pandemic.

Our experimental results, as well as the literature data [1, 3, 4, 5, 6, 8, 12], indicated that the COVID-19 pandemic had a negative impact on the mental well-being of the most students. Analysis of the obtained results and potential risk factors of mental health disorders of medical students indicated the need to implement psychological support measures for young people to improve their mental well-being during the pandemic. The possible psychological

support measures for medical students could include: information campaigns to raise awareness of mental health issues and reduce the stigma associated with seeking help; ensuring accessibility to professional counseling through online university resources; conducting evidence-based stress management workshops or programs that equip students with coping skills and resilience-building strategies to stressors. Fostering collaboration between medical schools and mental health professionals will provide holistic education and training of medical students, emphasizing the study of the interaction between the physical and mental health of the population. We consider it expedient to introduce state monitoring of mental health in higher educational institutions to develop mechanisms for improving the mental well-being of participants in the educational process.

CONCLUSIONS

1. During the COVID-19 pandemic, the majority of medical students had mental health disorders. Social dysfunction was the most common disturbance among medical students, and depression was the least common.

2. The highest prevalence of depression was observed among foreign students who studied far from their home and family. Anxiety and insomnia were the most common among students from Ukraine.

3. The study assumes that to improve the mental well-being of medical students during the pandemic, it is necessary to provide them with psychological support considering national characteristics and cultural and religious differences.

Contributors:

Inshyna N.M. – conceptualization, research, methodology, data collection, manuscript writing – initial project;

Chorna I.V. – conceptualization, research, methodology, data collection and analysis, manuscript writing – editing, reviewing.

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