

# STUDY OF THE MENTAL STATE OF STUDENTS IN THE PROCESS OF ONLINE EDUCATION DURING THE CORONAVIRUS PANDEMIC

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## ABSTRACT

**The aim:** Exploring the specifics of the underlying mental states of university students in the context of online learning during the COVID-19 pandemic and identifying their relationship to mental health.

**Materials and methods:** The study of mental states was carried out using three valid methods, namely: a clinical questionnaire for the detection and evaluation of neurotic states (K. Yakhin, D. Mendelevich), a questionnaire for diagnosing the level of social frustration (L. Wasserman, adaptation of V. Bojko), State-Trait Anxiety Inventory (STAI) (Ch. Spielberger, adaptation by Yu. Khanin). The author's questionnaire (L. Borysenko) was used to study the connection between the factors of online learning and emotional states of students. The obtained empirical data were subjected to qualitative and quantitative processing.

**Results:** The analysis of the obtained data allows to state the fact of predominance of high and increased level of situational and personal anxiety in the subjects in the conditions of online learning. In the process of psychodiagnosis of neurotic states, it was found that most students have a level of painful or borderline mental conditions such as anxiety, neurotic depression, asthenia and autonomic disorders. It was found that students have an elevated level and high level of social frustration. The main factors of online learning, which, according to students, cause them to deteriorate mental health are: forced to stay in a confined space, lack of direct social contacts, prolonged stay in a static position, increased study load and volume of tasks, anxiety for academic success and quality professional training, concern for their health and the health of their loved ones.

**Conclusions:** The forced transition to online learning due to the COVID-19 pandemic has negatively affected the mental state of many students. In most respondents, this manifested itself in increased anxiety, depression, autonomic reactions due to limited opportunities to communicate with teachers and classmates, new learning conditions and increased workload.

**KEY WORDS:** mental health, mental states, online learning, anxiety, social frustration, neurotic states

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## INTRODUCTION

Student life in society is perceived as a period of optimism and activity, diversified growth and expectations of great achievements. However, in reality, young people face many problems that are detrimental to their mental health – from such routine situations as overload in preparation for seminars and exams, to internally complex, existential, such as going through various stages of social adaptation, personal self-definition in a professional space etc. Various emotional experiences, stresses, and their consequences pose a serious threat to a student's mental health, especially when personal resources seem inexhaustible and optimism about health outweighs concern for the student.

Various socio-economic shocks have a significant impact on mental health. The challenge for students was to study during the COVID-19 pandemic, when the offline format in March 2020 was translated into an online form, through which all classes, exams, defense of scientific papers, etc.

were conducted. Student attendance was partially resumed in September and October through a combination of offline and online tuition, but online tuition was reintroduced in November.

A comprehensive study of student life during a pandemic showed that a significant number of students do not have sufficient online learning skills, but increased workload, the need to adapt to new requirements and online learning, which is accompanied by states of anxiety, anxiety, frustration, disappointment, and boredom, etc. [1]. Research has shown that university students suffered the most during lockdown due to uncertainty about academic success, future careers and social life [2].

Online learning was unfavorable for a large number of students due to difficulties in understanding the materials, technical problems, lack of interest in online classes, limited access to educational materials. Students faced obstacles such as social and economic disruptions, uncertainty about

their future careers, isolation, fear of losing loved ones, and so on [3, 4].

These circumstances significantly emphasize the need for a comprehensive study of the development and manifestations of various mental states in university students in online learning, the impact of lockdown on the mental health of students and the associated forced self-isolation.

## THE AIM

The aim of the article is to present the results of studying the features of the basic mental states of university students in the context of online learning in connection with the pandemic COVID-19 and to determine their relationship with the mental health of students.

## MATERIALS AND METHODS

The survey was conducted on the Internet through the Google form in March-April 2021 among students of the Kyiv National University of Economics (KNEU). The sample consisted of 95 students aged 18-20 years.

For the study, 3 valid methods were selected that allow a comprehensive study of the mental state of the individual and created an author's questionnaire to collect information about the characteristics of certain aspects of students' lives in online learning.

Clinical questionnaire for detection and evaluation of neurotic states (K. Yakhin, D. Mendeleovich) allows to analyze neurotic manifestations and identify symptoms of neurotic states. The questionnaire contains 68 questions aimed at diagnosing the manifestation of 6 mental states: anxiety, neurotic depression, asthenia, hysterical response, obsessive-phobic disorders, autonomic disorders [5].

The second method is the questionnaire for diagnosing the level of social frustration (L. Wasserman, adaptation of V. Bojko) [6, 7], which is an original tool for assessing social well-being and quality of life. The questionnaire consists of 20 questions related to various frustrators, such as dissatisfaction with family relationships, work, education, socio-economic status, health, ability to work, leisure, etc.

The third method is the State-Trait Anxiety Inventory (STAI), which makes it possible to diagnose two types of anxiety: reactive as a condition and personal as a stable characteristic of a person. The questionnaire was developed by C. Spielberger [8] and adapted by Y. Khanin [9]. It contains 40 statements, which are evaluated by the subject from 1 to 4 points, depending on his condition.

The theoretical basis for the study of mental states was the theory of functional systems by P. Anokhin [10], which provided specific opportunities for systematic analysis of different classes of natural and social phenomena – in the relationship between the human body (students) and the environment (online learning), in the interaction of selectively involved components (anxiety, depression, neurotic states, social disorders of students) and organizational and technical conditions of learning during a pandemic – to

obtain a certain result in terms of mental health.

## RESULTS

First of all, to study the peculiarities of students' attitudes to online learning, a survey was conducted on satisfaction with organizational and methodological, logistical support and psychological support of the educational process. It was found that 65.3% of respondents rated low satisfaction with various aspects of online learning. Students noted the deterioration of efficiency, learning outcomes, functional status in general. Students most often noted the following frustrators that led to the deterioration of mental state: violation of the regime of educational activities and recreation, inefficient time management, violation of biorhythms, social isolation, sanitation and hygiene conditions, inconvenience of working posture, hypokinesia, computer and Internet failures etc.

According to the results of an empirical study of anxiety according to the method of Ch. Spielberger-Y. Khanin, the levels of manifestation of reactive (situational) (Fig. 1) and personal (Fig. 2) anxiety of students during online learning were revealed.

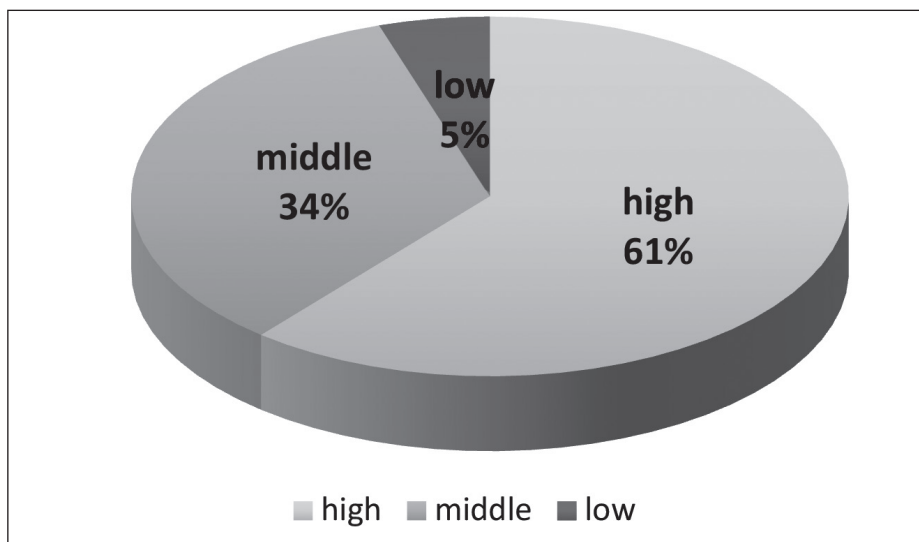
Of the 95 students, 61.8% of respondents found high levels of situational anxiety and 57.5% – high levels of personal anxiety.

Such indicators are due to stress and anxiety about the events associated with the COVID-19 pandemic and their perception as threatening, on the one hand, and the increase in mental stress, physical and mental fatigue during online training – on the other. Low levels of personal anxiety were found in 12.6% of people and low levels of situational anxiety – 4.76% of students, which indicates that a critical and rational view of events and their constructive assessment is inherent in a small proportion of respondents.

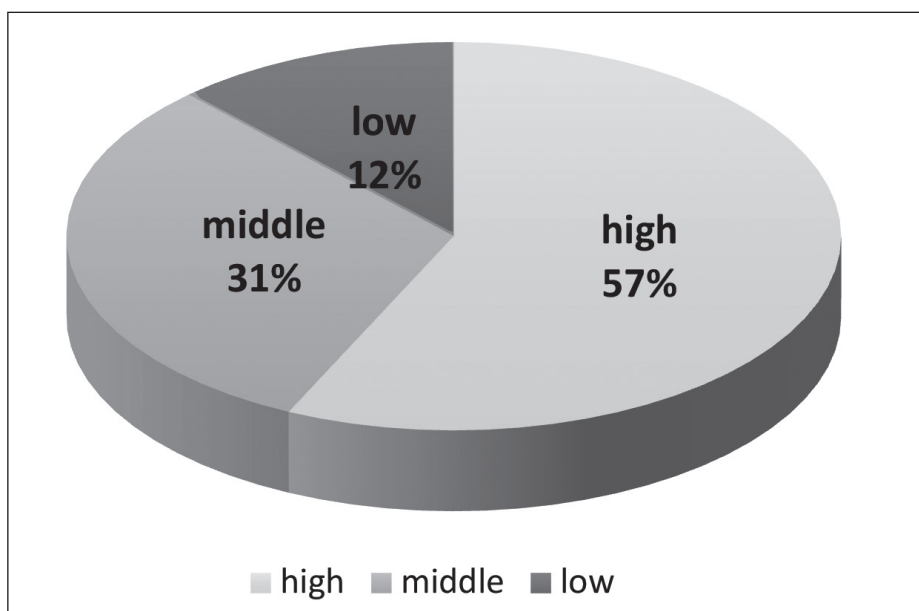
Assessment of neurotic states of students in the general sample was carried out using the method of K. Yakhin-D. Mendeleovich. Neurotic states are defined by the authors of the method as a complex of peculiar manifestations of human states (from painful to health) in the emotional and autonomic spheres, but with the preservation of adaptive capabilities of the individual and behavior control [11].

According to the results of the study, the indicators of neurotic states of respondents on the scales of anxiety, neurotic depression, asthenia, hysterical type of response, obsessive-phobic and autonomic disorders were obtained. Each of mental states has the following levels of manifestation: painful nature of the course, intermediate state and a sign of health (Fig. 3).

Analysis of the obtained data indicates that anxiety is painful in the majority of respondents – 54.7%; intermediate state (uncertainty) was found in 16.9% of people, and anxiety, which has a sign of health was found only in 16.9% of respondents. It should be noted that high levels of anxiety in students on this scale indicate emotional instability, negatively colored experience of internal worry and concern about current events, the need to find addi-



**Fig. 1.** Features of the manifestation of reactive anxiety in students



**Fig. 2.** Features of the manifestation of personal anxiety in students

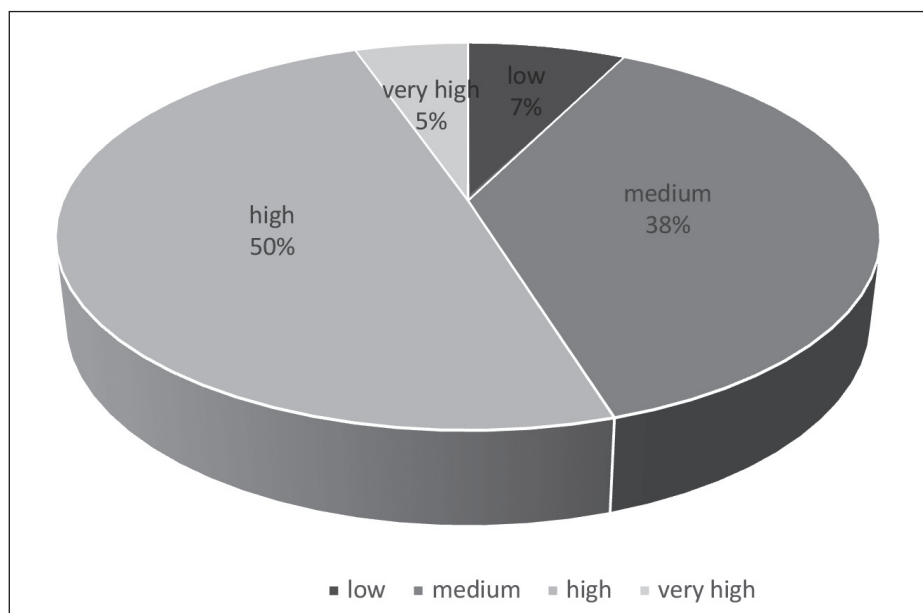
tional information on the implementation of educational tasks; tendency to perceive a wide range of situations as threatening one’s own self-esteem, prestige or vital activity; increased sensitivity to anticipated adverse events or failures that may occur.

The scale “neurotic depression” showed a tendency to the painful nature of its course in 57.7% of people compared with the intermediate state in 36.8% of people and health status in 16.8% of people. Thus, more than half of the respondents have obvious signs of depression, which is manifested in a decrease in emotional reactions, lethargy, slowness, decreased interest in the environment, monotony of behavior; indifferent attitude to the environment, depressed mood with a feeling of helplessness, reduced motivation, narrowing the range of interests, negative attitude towards loved ones, manifestations of resentment, lack of desire to work. there are ideas of self-blame and inferiority, manifestations of apathy. These data are consistent with the results of the assessment on the scale

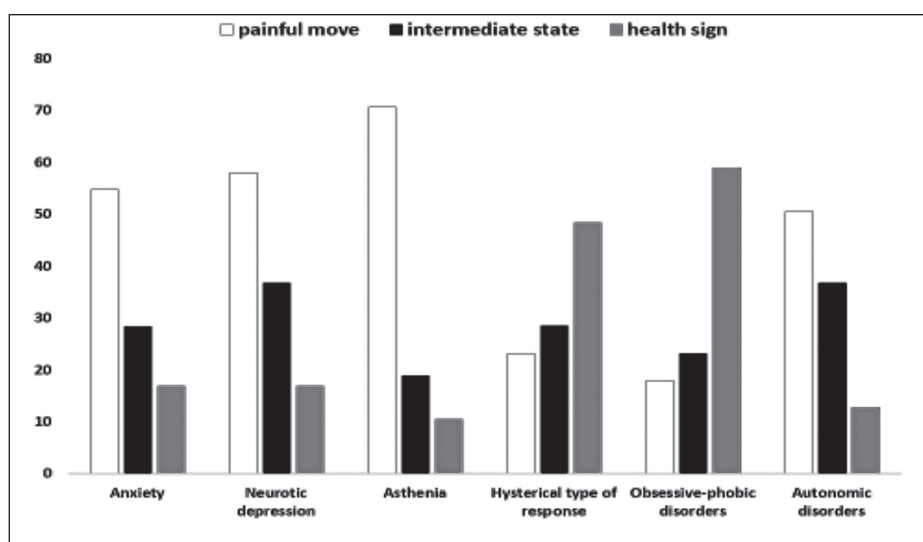
of “asthenia”. An even larger proportion of respondents (70.6%) found an unhealthy course of asthenia compared to the intermediate state (18.9%) and health status (10.5% of people). A characteristic manifestation of asthenia are signs of anxiety, insecurity, passivity; feeling tired, expecting trouble, feeling worse, decreased activity, mood; predisposition to stress, decreased motor activity. The conditions of online learning and interpersonal relationships are perceived as psycho-traumatic, dominated by chronic dissatisfaction with their own learning activities and themselves as its subject.

According to the “hysterical type of response” scale, 48.4% of people showed a predominance of health and 23.2% of intermediate state. On the scale of “obsessive-phobic disorders” signs of a painful course of the neurotic state were detected only in 17.9% of people, with a predominance of a healthy course in 58.9% of people and an intermediate state in 23.2% of people.

The situation with the results on the scale “autonomic



**Fig. 3.** The results of measuring the neurotic states of students according to the method of Yakhin – Mendelevich



**Fig. 4.** Levels of manifestation of social frustration of students in the conditions of online learning

disorders” is very disappointing. According to this scale, the state of health was found in only 1.7% of people. Unhealthy state of the course was found in 50.5% of respondents, intermediate state – in 36.8% of people. These phenomena are manifested in a constant feeling of fatigue; frequent headaches; feeling emotionally and physically exhausted; general weakness and decreased activity; complete or partial insomnia; shortness of breath and respiratory disorders during exercise; noticeable decrease in sensory sensitivity: impaired vision, hearing, touch.

Measurement of students’ social frustration was performed using the Wasserman-Boyko method [6]. According to the authors of the method, social frustration is a type of mental stress caused by the inability for any reason to realize their current social needs: their achievements in society, relationships with others, social status and more. Prolonged destabilizing effects of frustrating factors lead

to reduced adaptive capacity of the individual and partial maladaptation, and in the absence of benign mechanisms of psychological protection and lack of social support – to the emergence of anxiety, depression and neurotic states.

The results of the diagnosis of social frustration of students are presented in Figure 4.

Analysis of the results indicates that most students have an increased level (49.5% of people) and a high level (5.3% of people) of social frustration, which is manifested in increased mental stress due to dissatisfaction with themselves and academic achievement, the need for long stays before monitor, information overload, forced social isolation, unsatisfactory leisure, fear for the health of themselves and their families. All this leads to a loss of interest in learning, indifference, deepening anxiety and the emergence of neurotic states.

To determine the relationship between indicators of social frustration, anxiety and neurotic states, we performed

**Table I.** Correlation coefficients (according to Pearson) between indicators of social frustration, personal and situational anxiety and neurotic states (n = 95), degree of freedom (n-2), p ≤ 0.05

Neurotic states	Personal anxiety	Situational anxiety	Social frustration
"Anxiety" scale	0,457		0,586
"Neurotic Depression" Scale	0,679		0,487
Asthenia scale		0,532	0,674
Scale «Hysterical type of response»		0,387	
Scale "Obsessive-phobic disorders"	0,564		
Scale "Vegetative disorders"	0,664	0,489	0,764

a correlation analysis according to Pearson, the results of which are presented in table. I.

The results of correlation analysis revealed positive statistically significant relationships between indicators of "social frustration" and indicators of neurotic states on the scales: "anxiety" ( $r = 0.586$ ), "neurotic depression" ( $r = 0.487$ ), "asthenia" ( $r = 0.674$ ), "autonomic disorders" ( $r = 0.764$ ); between indicators "personal anxiety" and indicators on the scales "anxiety" ( $r = 0.457$ ), "neurotic depression" ( $r = 0.679$ ), "obsessive-phobic disorders" ( $r = 0.564$ ), autonomic disorders ( $r = 0.664$ ); between indicators "situational anxiety" and indicators on the scales "asthenia" ( $r = 0.532$ ), "hysterical type of response" ( $r = 0.387$ ), "autonomic disorders" ( $r = 0.489$ ).

The obtained correlation coefficients indicate a significant direct relationship between frustrators, mental states of the individual during online training and the current quarantine restrictions.

## DISCUSSION

This study was aimed at identifying the characteristics of the mental states of university students during a pandemic. A comparison of different studies indicates that the pandemic has a significant negative impact on the emotional well-being and mental health of students [13-18]. Despite circumstances such as differences in research goals and measurement tools, the researchers conclude that the COVID-19 pandemic has significantly affected human mental health. The study of the impact of the pandemic on the psychological health of staff in educational institutions revealed such signs of negative emotional states as anxiety, irritability, aggression, fear, depression, confusion, anger, panic, etc. – in 58.3% of respondents; deterioration of various spheres of health (psychological, physical, professional, spiritual) – 18.0%; uncertainty about the future of 12.8% [13].

When analyzing the dynamics of depression and anxiety of respondents from the beginning of lockdown during 3 weeks 2020, researchers noted an increase in depression and anxiety, which the authors associate with physical limitations, lack of sufficient external stimuli: impressions, events, intensity of interaction with others [13].

Steven Taylor, who studied the effects of the pandemic on the human psyche and introduced the concept of "Covid stress" into psychology, pointing out that it most often occurs in people who have obsessive-compulsive

disorder and are prone to anxiety and fear for their health. But students generally have a high level of adaptation and stress in a pandemic [19].

The results of our study are fully consistent with the above works. It should be noted some limitations of this study, as we were not able to perform a comparative analysis of empirical data – the mental state of students throughout the period of online learning. This is due, firstly, to the difficulties in organizing the educational process at the university at the beginning of the lockdown and the uncertainty of the transition from offline to blended and online forms of learning; secondly, – technical limitations when conducting a survey of students using Google-form while maintaining a constant composition of the total sample of respondents.

## CONCLUSIONS

The study of the peculiarities of mental states in the conditions of forced online learning in connection with lockdown revealed changes in mental states and emotional sphere of the individual, which were manifested in the dominance of increased and high levels of reactive and personal anxiety; asthenic and depressive states, autonomic disorders, social frustration.

Although it is believed that young students easily recover from negative situations and adapt to new conditions, we believe that students need help to find the resources to maintain mental health at the required level.

We consider that in order to confirm the link between mental states and students' mental health, it is necessary to continue research on students' mental states, regardless of whether the online form of education will be maintained or whether learning will return to offline. Identifying the dynamics of mental health indicators will allow us to draw appropriate conclusions about the role of online and offline forms of learning for students' mental health.

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#### Conflict of interest:

The Authors declare no conflict of interest.

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