DOI: https://doi.org/10.31392/UDU-nc.series15.2025.07(194).48
УДК: 159.9:004:378.091.3:614.8

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RESEARCH ON THE PSYCHOLOGICAL HEALTH OF STUDENTS USING MODERN DIGITAL TECHNOLOGIES TO ENSURE LIFE SAFETY CONDITIONS

In the current conditions of martial law, socio-economic instability, and increasing psychological stress, the issue of preserving students' psychological health has become particularly critical. The psychological state of student youth serves as a key indicator of their ability to learn effectively, adapt socially, build interpersonal relationships, and maintain overall resilience. Consequently, there is a growing need for tools that enable timely detection of psychological maladjustment signs and the development of targeted support programs. The use of digital technologies in psychodiagnostics opens new opportunities for objective and comprehensive assessment of students' psychological well-being, as well as ensuring their life safety in today's educational environment. The creation and implementation of a modern psychodiagnostic software system facilitates data collection, storage, and systematization, improves the accuracy of test result analysis, and enables real-time data visualization. This contributes to evidence-based decision-making in providing psychological assistance. Thus, this research is highly relevant both practically and academically, as it addresses contemporary challenges in education and aims to strengthen the psychological well-being of student youth.

Key words: *psychological health, students, digital technologies, psychological support, life safety.*

Куйдіна Тетяна, Кабацька Олена, Щиров Вячеслав. Дослідження психологічного здоров'я студентів з використанням сучасних цифрових технологій для забезпечення умов безпеки життєдіяльності. *У сучасних умовах воєнного стану, нестабільної соціально-економічної ситуації та зростання рівня психологічного навантаження, особливої значущості набуває проблема забезпечення психологічного здоров'я студентів та умов їхньої безпеки життєдіяльності. Психологічний стан студентської молоді є важливим показником їх здатності до ефективного навчання, соціальної адаптації, формування особистісних взаємовідносин та загальної життєстійкості. У зв'язку з цим зростає потреба в інструментах, які дозволяють своєчасно виявляти ознаки психологічної дезадаптації та розробляти цільові програми підтримки. Використання цифрових технологій у сфері психодіагностики відкриває нові можливості для об'єктивної та комплексної оцінки психологічного стану студентів, забезпечує збір, накопичення та систематизацію даних, підвищення точності аналізу результатів тестування та оперативну візуалізацію інформації, що сприяє прийняттю обґрунтованих рішень щодо надання психологічної допомоги. Мета дослідження – перевірити ефективність психодіагностичного комплексу для оцінки психічного здоров'я студентської молоді. У дослідженні взяли участь 150 студентів Харківського національного університету імені В. Н. Каразіна різних факультетів, які добровільно надали згоду на участь. Вибірка охоплювала студентів з першого по шостий курс віком від 17 до 25 років. До складу психодіагностичного комплексу було застосовано валідні та перевірені у практиці методики: «Дослідження особистісної та реактивної тривожності Ч. Спілбергера – Ю. Ханіна»; методика «Прогноз» для оцінки рівня нервово-психічної стійкості; тест визначення типу темпераменту за методикою Г. Айзенка. Застосування комплексу дозволило отримати інформативні показники особистісного психологічного стану студентів, виявити потенційні ризики зниження психологічного здоров'я, а також сформулювати індивідуальні рекомендації. Окрім того, результати аналізу були узагальнені за віковими категоріями та року навчання, що дало змогу виявити групові закономірності та своєчасно планувати індивідуальну або групову психологічну підтримку.*

Ключові слова: *психологічне здоров'я, студенти, цифрові технології, психологічна підтримка, безпека життєдіяльності.*

Problem Statement. One of the priorities of modern society that needs to be addressed urgently is the creation of effective psychological health support programmes aimed at ensuring the comprehensive development and preservation of the mental well-being of students.

One of the promising areas for the transformation of the psychological service in the education system is the introduction of digital technologies, which greatly contributes to the optimisation of the collection, processing and analysis of psychodiagnostic data, increasing the efficiency and accuracy of psychological support**.**

Analysis of literary sources. The regulatory documents of the Ministry of Education and Science of Ukraine emphasise the need to create effective psychological support in the education system, which involves the development and implementation of modern psychodiagnostic tools. It is also important to ensure appropriate conditions for the collection, storage, processing and analysis of psychodiagnostic data, which can be implemented using modern digital technologies [2; 4; 5].

To solve these problems, for a reasonable choice of psychodiagnostic methods of health assessment, it is advisable to consider the concept of 'mental health' and identify the main indicators that will allow for a rapid assessment of health [3].

The WHO defines mental health as «a state of well-being in which a person can realise his or her potential, cope with the normal stresses of life, work productively and effectively, and contribute to society» [11].

Foreign scientists S. Oswalt, R. Pedrelli, M. Nyholm, A. Yon and domestic scientists D. Volkov, E. Nevedomska, L. Pylypenko and others [1; 7; 8; 12-14].

All the authors who studied it note that the mental health of young people is a priority of the health care system. It is at this age that the formation of the personality, the formation of intrapersonal structures associated with the safe future of the individual and the country as a whole falls.

S. Oswalt and T. Wyatt in their research analyse the relationship between stress levels, mental health and academic performance of students [13]. P. Pedrelli and her colleagues emphasise that student stress is multifactorial and includes not only academic workload, but also social and personal difficulties associated with the transition to adulthood [14].

In her works, M. Nyholm focuses on the need to develop accessible, adapted and youth-oriented psychological support services that can provide timely and effective assistance with mental health problems [12].

The study by L. Pylypenko and Y. Prystaiko analysed the impact of martial law on the mental health of young people. The study found that «martial law has long-term negative consequences for young people». The subjects have a low level of overall mental health stability, a decrease in well-being, activity and mood, as well as a high level of anxiety, characterised by manifestations of an acute stress reaction [8].

D. Volkov and O. Chernykh emphasise the negative impact of anxiety on the psychological health of young people. Students with excessive anxiety have difficulties with low levels of adaptation to the educational process, a significant workload of educational material, combining study and work, disappointment with their chosen profession and personal problems [1].

In her study, E. Nevedomska examines the relationship between anxiety and temperament in students. The author states that anxiety in simple situations contributes to successful action, but in difficult situations, a high level of anxiety disorganises a young person, reduces the level of cognitive activity, affects social adaptation, and causes emotional disturbances. The data obtained by E. Nevedomska and U. Mykhailyshyn confirm that the level of anxiety is caused by a certain type of temperament. The study showed that students with a dominant choleric and melancholic temperament show a high level of personal anxiety, while sanguine and phlegmatic students demonstrate a low or moderate level. E. Nevedomska emphasises that it is extremely important for teachers to take into account the psychological and physiological characteristics of students and, if necessary, help them overcome their anxiety [6; 7].

The relevance of the research topic is due to the growing need to implement effective means of monitoring and supporting mental health in the educational environment. In this context, there is a need to conduct research aimed at testing the effectiveness of the developed psychodiagnostic complex as a tool for assessing the mental state of students.

The use of such a complex allows not only to record the level of mental health at a certain point in time, but also to track its dynamics during the educational process. This creates the preconditions for timely detection of symptoms of psychological disorders, such as anxiety, depressive disorders or post-traumatic stress disorder, and prompt provision of appropriate psychological assistance. Thus, the introduction of a psychodiagnostic complex in the activities of, for example, the psychological service of higher education institutions can significantly increase the efficiency of the system of preserving and strengthening the mental health of students and ensuring the conditions for their life safety.

Scientists V. Sokurenko, O. Bandurka, S. Bortnyk and others note that humanity is under threat of any dangers every day that require difficult decisions, for example, in: preparing a safe environment for living and learning; maintaining physical and psychological health, vitality; creating conditions for staying in constant safety; ensuring psychological comfort in the process of education and professional development; forming relationships with family and other people, etc [10].

The purpose of the article is to assess the psychological health of students using digital technologies for effective psychological support in the educational process.

Presentation of the main research material. The letter of the Ministry of Education and Science of Ukraine «On the Priority Areas of the Psychological Service in the Education System» states that in the process of selecting psychodiagnostic tools for specialists of the psychological service of educational institutions, it is advisable to focus on the minimum necessary set of methods that will effectively solve the typical and most common problems of participants in the educational process. The diagnostic material should be clearly structured according to the main target groups (students, teachers, parents, etc.) and levels of education (preschool, general secondary, vocational, higher education). The methods used should be valid, easy to use, common among psychology professionals, and not require significant time to master and administer [5].

Based on the analysis of scientific sources and taking into account the requirements for psychodiagnostic tools, the following methods of studying the state of psychological health of students were selected as valid, proven in practice: the methodology for studying personal and reactive anxiety as a stable human characteristic by Ch. Spielberger and Y. Khanin; the test for determining temperament according to the methodology of G. Eysenck; the methodology 'Prognosis' to assess the level of neuropsychological stability of a person [9].

The study involved 116 voluntary students from different faculties of V. N. Karazin Kharkiv National University, from the first to the sixth year of study, aged 17-25, who were tested to assess their own psychological health.

In the process of designing the psychodiagnostic complex, the following digital tools has been used: «Google Forms» as a service for testing, «MySQL» as a database management system, «C++» programming language for the application logic implementation, and «Tableau» as a data visualisation tool.

To quickly evaluate a large amount of data obtained as a result of testing with the help of the psychodiagnostic complex, we visualised the contents of the database in the form of diagrams. Such a display of test results is appropriate for visualising the state of psychological health of a student group. This contributes to the timely identification of the need for psychological support for social adaptation and regulation of anxiety. The results obtained can be used in the activities of the university psychological service, as well as in such disciplines as «Stress Resistance», «Human Health and Life Safety», «Health Psychology and the Basics of a Healthy Lifestyle», «Fundamentals of Occupational Health and Safety», «Methods of Conducting Educational Work to Form Motivation for a Healthy Lifestyle», «Health Care, Life Safety and Labour Protection», «Modern Health Care Technologies» and others.

By processing the data with the developed psychodiagnostic complex, general diagrams of the psychological state of students were obtained depending on the course of study (Figs. 1-3).

The results of testing students' neuropsychological stability using the “Prognosis” methodology are shown in Figure 1. The methodology is designed to assess personal stress resistance and neuropsychological stability. It allowed us to identify some initial symptoms of psychological disorders and assess the likelihood of their development and manifestation in behaviour and activity.

As a result of the analysis of the data obtained (Fig. 1), it was found that there are students in all courses with an unfavourable prognosis in terms of neuropsychological stability and in need of additional psychological support.

The majority of the respondents have a satisfactory state of psychological health, one third of students have an unfavourable state and only a small part of students have a favourable or very favourable psycho-emotional state.

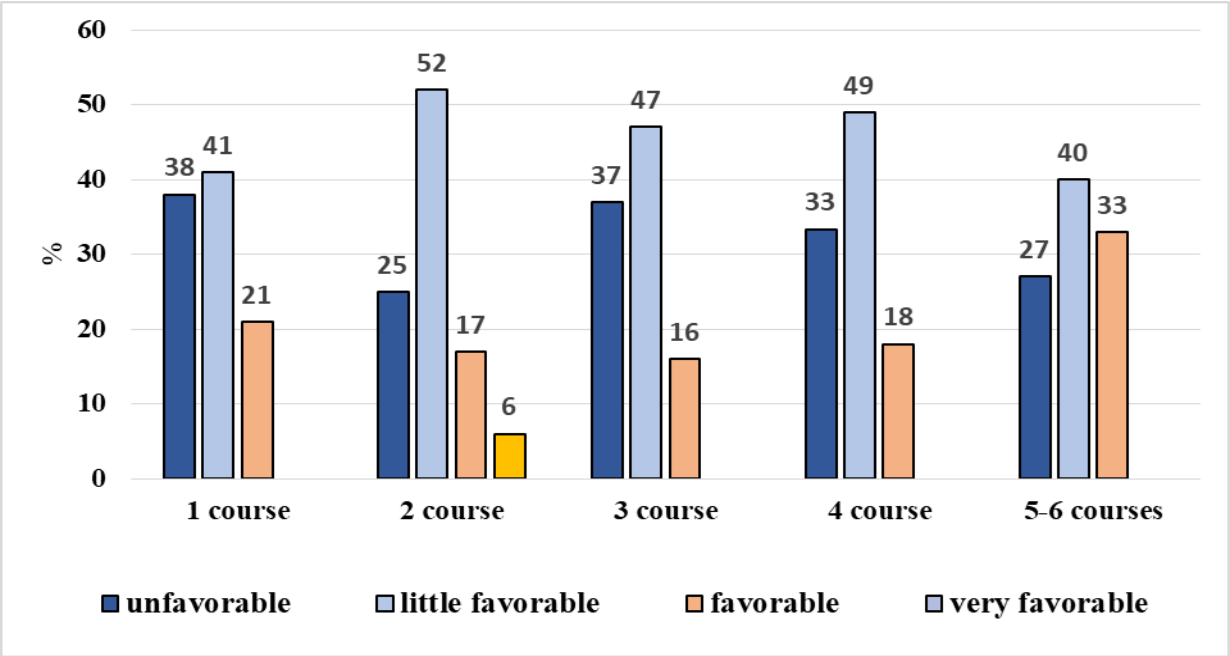


Fig. 1. Results of testing students using the «Prognosis» methodology, indicators of neuropsychological stability

The results of testing according to the methodology of Ch. Spielberger and Y. Khanin allowed us to determine the distribution of the level of reactive and personal anxiety in students (Fig. 2, 3). The diagrams of the results of the study of reactive anxiety (Fig. 2) show that among students of different groups, taking into account their course of study, the level of anxiety is distributed as follows: more than 60% of students of the 1st and 5th-6th years have a low level of anxiety, one third of all students surveyed have moderate anxiety, which requires the attention of teachers and psychologists, one third of students of the 3rd-6th years have a high level of anxiety and need psychological support. Reactive anxiety usually occurs in situations of social uncertainty, in conditions of insufficient experience of interpersonal interaction or low level of effective communication skills. This type of anxiety manifests itself in the form of increased psycho-emotional stress, anxiety and nervousness, and in conditions of very high levels of reactive anxiety, attention deficits and a decrease in the accuracy of actions can be observed, which negatively affects academic performance.

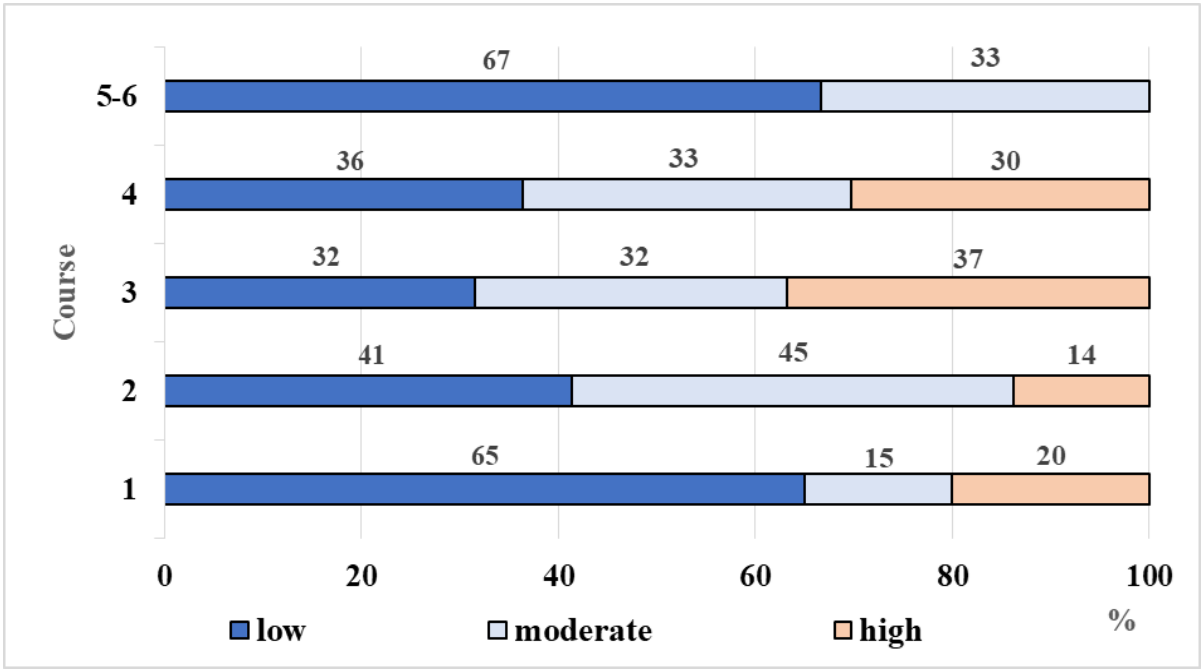


Fig. 2. Results of testing students by the method of Ch. Spielberger and Y. Khanin, indicators of reactive anxiety

Figure 3 shows the results of testing the level of students' personal anxiety, which reflects a high level of this anxiety in the majority of students of 1-4 years of study. More than half of the 5-6 year students have low and moderate levels of personal anxiety.

Personal anxiety is characterised by a persistent tendency to perceive most situations as threatening and to react to such situations with a state of anxiety. Very high personality anxiety is directly correlated with emotional and neurotic breakdowns and psychosomatic illnesses.

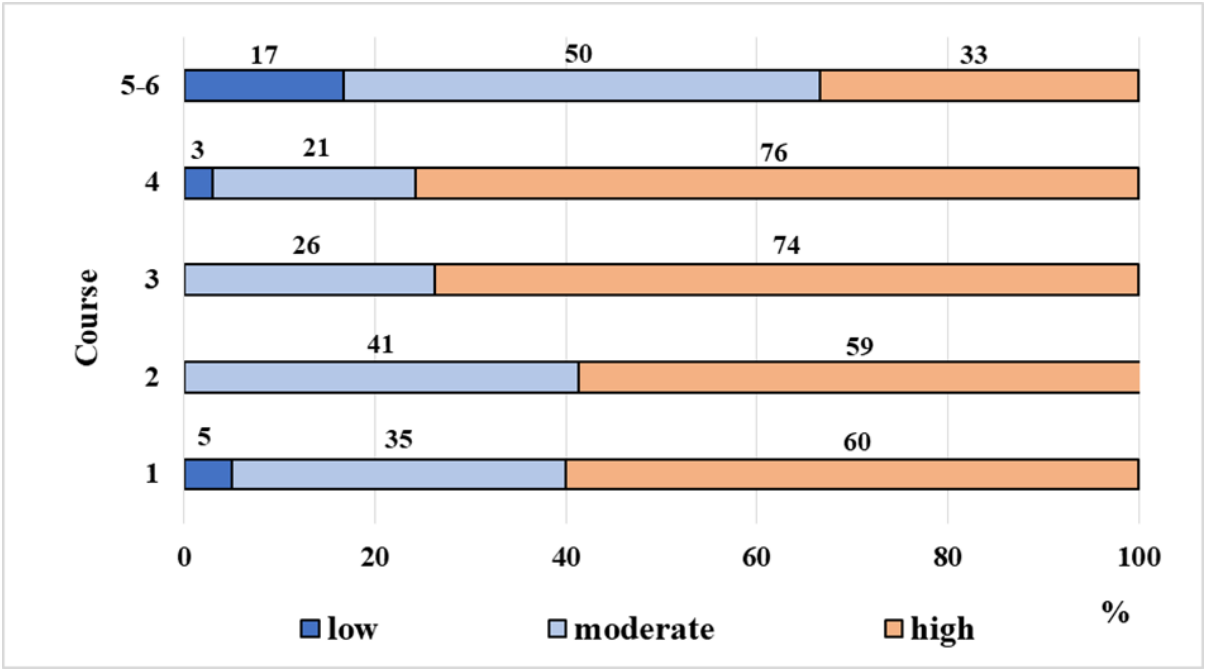


Fig. 3 Results of testing students by the method of Ch. Spielberger and Y. Khanin, indicators of reactive anxiety

The analysis of the results of the test according to the methodology of Ch. Spielberger and Y. Khanin, assessment of the level of reactive and personal anxiety allows us to see that these two types of anxiety cause different levels of stress in a person. Therefore, it is necessary to apply different methods of psychological correction.

Based on the results of the study, recommendations were developed to support the psychological health of students, which were included in the curricula of the courses «Stress Resistance», «Human Health and Life Safety», «Health Psychology and the Basics of a Healthy Lifestyle», «Fundamentals of Occupational Health and Safety», «Methods of Educational Work to

Form Motivation for a Healthy Lifestyle», «Health Care, Life Safety and Occupational Health», «Modern Health Care Technologies» and others.

Conclusions. Based on the analysis of scientific literature, the main indicators that allow for a rapid assessment of the state of psychological health of young people to ensure the conditions for their safety of life are identified. Studies by foreign and domestic scientists have shown that students in the process of education have constant overload, chronic nervous tension, stress, which lead to a decrease in social adaptation, the effectiveness of cognitive activity, which affects academic performance.

Based on the analysis of scientific literature, psychological methods have been selected and implemented in the psychodiagnostic complex: the 'Prognosis' method for assessing the level of neuropsychological stability of a person; the method of studying personal and reactive anxiety by Ch. Spielberger and Y. Khanin, which allowed to identify some initial symptoms of psychological disorders of personality development. Thus, the relationship between the level of anxiety and the type of temperament of students was investigated.

Based on the results of the study of psychological and pedagogical literature and the results of the study, it was found that the type of temperament also affects the level of anxiety and stress resistance of students. Therefore, when providing psychological support and making recommendations for increasing stress resistance and relieving stress in the process of students' education, it is necessary to pay attention to temperament as an important indicator in the process of individual selection of psychological tools.

Prospects for further research on the scientific problem of supporting students' psychological health in the process of studying at a higher education institution and ensuring the conditions for their safety of life are the introduction of the latest psychodiagnostic digital technologies. The results of the application of these technologies will allow for the development of an individual strategy for preserving, maintaining and restoring the psychological health of each student and ensuring a comfortable educational environment.

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