

The background of the page is a blurred photograph of a meeting. Several people are seated around a table, some with their hands on papers or devices. In the background, a person is standing and pointing towards a whiteboard. The bottom half of the image is overlaid with a large, intense fire effect, with bright orange and yellow flames rising from a bed of dark, charred wood or debris.

**ACTUAL
PROBLEMS
OF EDUCATION
AND SCIENCE IN THE
CONDITIONS OF WAR**

COLLECTIVE MONOGRAPH

ACTUAL PROBLEMS
OF EDUCATION AND
SCIENCE IN THE
CONDITIONS OF WAR

Compiled by
VIKTOR SHPAK

Chairman of the Editorial Board
STANISLAV TABACHNIKOV

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The collective monograph is a scientific and practical publication that contains scientific articles by doctors and candidates of sciences, doctors of philosophy and art, graduate students, students, researchers and practitioners from European and other countries. The articles contain research that reflects current processes and trends in world science.

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PERCEIVED STRESS, RESILIENCE AND THEIR INFLUENCE ON THE FORMATION OF COPING BEHAVIOR IN MEDICAL STUDENTS IN THE CONDITIONS OF FULL-SCALE WAR IN UKRAINE

Russia’s invasion of Ukraine has become the largest ground war in Europe since World War II. War is an extreme situation, i.e. one that goes beyond ordinary, “normal human experience» and affects the mental health of the population of Ukraine, including modern students. One of the important tasks of the modern higher education system in Ukraine is the formation of professionally competent and psychologically and mentally healthy individuals¹. The World Health Organization defines mental health as “a state of well-being in which a person can realize his own potential, cope with the normal stresses of life, can work productively and fruitfully, and can contribute to the life of his community» (WHO, 2005). Acquiring higher education in a reasonable time characterized by a combination of intense mental activity, a variety of experiences of learning situations, the complexity of psycho-

1 Shevchenko, R., Kaafarani, A., Aliieva, T., Piletska, L., Radul, I., Klepar, M., et al. (2020) Features of the psychoemotional state of internally displaced families from the war zone. *Revista Inclusiones*, 14, pp. 157–69. <https://doi.org/10.26724/2079-8334-2019-2-68-105-109>.

logical growth, which, in turn, imposed on socio-economic and political societal transformations². Because of a full-scale war, there is a negative impact on the emotional state of students of higher education with the formation of stress³, anxiety, fear, anxiety and depression, which have negative consequences for both the educational process and the mental health of students^{4,5}. Effective mastery of the medical profession during a full-scale war creates new challenges for modern students of Ukraine; therefore, it is extremely relevant to study the impact of multicomponent stress on medical education students, as well as the study of protective factors and mechanisms that will contribute to successfully overcoming it⁶.

157 students of the first bachelor's level of the Educational and Scientific Medical Institute of the Poltava State Medical University were included in the study. Before starting the study, all students informed about the content of the survey and that participation was voluntary and confidential.

In order to study the peculiarities of the impact of stress on the emotional and psychological state of students in the conditions of a full-scale war, we conducted a study using the scale of perceived stress PSS-10 (Perceived Stress Scale (Cohen et al., 1983)⁷ to determine the degree to which a person rates their current life situation as stressful, as well as how stressful – that is, unpredictable, uncontrollable, and overwhelmed – a person considers the previous month of their life. In addition, the study plans to examine students' ability to cope with difficult life events and recover from difficulties or stress using the Connor-Davidson Resilience Scale (CD-RISC-25) (K. Connor, J. Davidson, 2003)⁸ and the R. Lazarus coping test⁹. SPSS version 22.0 was used for statistical processing of the obtained results.

- 2 Ramachandiran, M. & Dhanapal, S. (2018). Academic stress among university students: A quantitative study of generation y and z's perception. *Pertanika Journal of Social Sciences & Humanities*, 26(3), pp. 2115-2128. Retrieved from https://umexpert.um.edu.my/public_view.php?type=publication&row=NzKxNTE%3D
- 3 Morgan, B. M. (2017). Stress management for college students: An experiential multi-modal approach. *Journal of Creativity in Mental Health*, 12(3), pp. 276-288. <https://doi.org/10.1080/15401383.2016.1245642>
- 4 Fayyad, J., Cordahi-Tabet, C., Yeretzian, J., Salamoun, M., Najm, C., Karam, E.G. (2017) Resilience-promoting factors in war-exposed adolescents: an epidemiologic study. *Eur Child Adolesc Psychiatry*. Feb, 26(2), pp. 191-200. doi: 10.1007/s00787-016-0871-0.
- 5 Thompson, M. D., Draper, B. S., & Kreidler, C. M. (2022) The Relationship Between Stress, Coping Strategies, and Problem-Solving Skills Among College Students. *Inquiries Journal [Online]*, 14. Available: <http://www.inquiriesjournal.com/a?id=1945> [Accessed 9 Dec. 2022]
- 6 Katrushova, L., Yalanska, S., Rudenko, L., Katrushov, O (2019) Peculiarities of the process of psychological adaptation of foreign students of Ukrainian higher education institutions of medical profile, role of emotional intelligence in the socialization process. *Wiadomosci lekarskie (Warsaw, Poland : 1960)*, 72 (10), 1930 - 1934
- 7 Cohen S, Kamarck T, Mermelstein R. (1983). A global measure of perceived stress. *J Health Soc Behav* 24:386-396.
- 8 Connor K., Davidson J., (2003) Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depression And Anxiety*, 18:76-82 DOI: 10.1002/da.10113
- 9 Folkman, S., & Lazarus, R. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, 48, 150-170. DOI: 10.1037/0022-3514.48.1.150.

A high level of perceived stress according to the PSS-10 method was found in $37,6\pm 3,9\%$ students, the limit level of stress resistance – in $55,4\pm 3,9\%$ education seekers. Perceived stress is considered as a general result of the influence of real events, coping processes and a number of other personal and contextual factors: expectations, tolerance to frustration, the level of accumulated stress, a person's resource state and the presence of social support. The total PSS indicator reflects how stressful a person perceives the current moment of his life - it is a conscious assessment of the degree to which external demands exceed his own ability to cope with them. The theoretical basis of the technique is the cognitively mediated stress theory of R. Lazarus, according to which a person's reaction to a difficult event, as well as its pathogenic effect on mental and physical health, is determined not so much by the objective characteristics of the stressor (its nature, intensity, duration, suddenness, etc.), as much as a subjective assessment of the event in the context of coping options. A stress reaction occurs when: a) the situation is perceived as significant and threatening, b) a person assesses his own resources as insufficient to overcome it. The PSS Perceived Stress Scale measures how stressful—that is, unpredictable, uncontrollable, and overwhelming—a person finds the previous month of their life to be.

The most significant stressogenic factors related to the educational process, which affected students in the process of obtaining education in a distance format, students noted adaptation to new forms of teaching in a mixed format using distance form in synchronous and asynchronous versions ($91,1\pm 2,3\%$), difficulties when working with a larger volume of information for independent study ($88,4\pm 2,3\%$); difficulties in adapting to the future profession and assimilation of professional knowledge, abilities and skills, qualities ($75,8\pm 1,7\%$). In addition, almost all students noted the powerful impact of wartime stress: they were in a state of pronounced neuropsychological tension, negative emotional experiences, and mental discomfort. Students reported feeling less in control ($65,2\pm 1,7\%$); increased in difficulties concentrating ($42,8\pm 1,7\%$); lethargy, apathy, increased fatigue, difficulties in performing everyday tasks ($58,2\pm 1,7\%$); sleep and eating disorders ($45,8\pm 1,7\%$); excessive excitement, nervous tension with irritability, depressed mood ($41,7\pm 2,7\%$); a sense of threat, danger, assessment of the current life situation as uncertain, as well as uncertainty in the

future (58,6±1,7%); loss of curiosity, motivation and interests (41,7±1,7%); decreased activity (39,2±1,7%). Changes related to Russia's armed aggression in Ukraine affected the way of life, habits, caused uncertainty about the future and education, which provokes the development of depression and anxiety. Those seeking education noted that they felt fear, anxiety, and excitement both for themselves and for their loved ones and relatives, due to the obsessive viewing of news in a non-stop mode, information from occupied places and areas where active hostilities are taking place and/or places subjected to artillery shelling, uncertainty of the situation with the constant threat of artillery shelling or drone attack, staying in shelters during an air alert, predicted on schedule and/or emergency (blackouts) power outages. Most students reported the psychological difficulties of war rather than the physical dangers, describing them as «exhausting» and making it very difficult to concentrate during studies.

In order to study the psychological stability of medical education students of the first bachelor's level, we used the Connor-Davidson resilience scale (CD-RISC-25). Resilience is a set of personal traits and dispositions that help a person constructively overcome challenges and threats, quickly recover from life traumas. There are different interpretations of resilience in the literature. Reid et al., Ta Shackelford et al. define resilience as the ability to recover from a traumatic experience and return to healthy psychosocial and physical functioning^{10,11}. Resilience is the basis of successful adaptation to stress, a partially or completely static ability or property of the individual.

A low level of resilience was found in most students with high levels of perceived stress 82,7±2,9%, which indicates a high risk of stress-related mental disorders due to difficulties in restoring psychological comfort on one's own. The average level of psychological resilience revealed in 75,4±3,9% students with a marginal level of perceived stress, indicates that the respondents of this group have a more effective ability to recover, change, adapt after stressful events, changes and troubles.

A separate issue is the definition of the medical profile of modern students of strategies for overcoming the long-term consequences of the armed

10 Adversity and Resilience Are Associated with Outcome after Mild Traumatic Brain Injury in Military Service Members. / [M. W. Reid, D. B. Cooper, L. H. Lu et al.]. // *Journal of Neurotrauma*. – 2018. – №10. – P. 1146–1155

11 Interrelationships Among Resilience, Posttraumatic Stress Disorder, Traumatic Brain Injury, Depression, and Academic Outcomes in Student Military Veterans / J. L. Shackelford, L. S. Smith, C. T. Farrell, J. Neils-Strunjas. // *Journal of Psychosocial Nursing and Mental Health Services*. – 2019. – №57. – P. 35–43.

aggression of the Russian Federation in Ukraine. When studying students with the help of the «Methods of Coping Behavior» questionnaire, we assessed the degree of students' use of strategies for overcoming stressful situations, such as confrontational coping, distancing, self-control strategy, search for social support and acceptance of responsibility, avoidance, problem-solving planning strategy, and self-actualization.

In the group of students with a high level of perceived stress, a combination of non-constructive maladaptive coping strategies with dominance was found: «Distancing» ($72,4 \pm 3,9\%$), «Confrontational coping» ($69,7 \pm 3,9\%$), and «Escape» ($61,9 \pm 3,9\%$), which reflects a tendency to imaginary aspirations and behavioral efforts aimed at avoiding or escaping from solving problems, and also shows a desire for cognitive efforts to separate from the situation due to the subjective reduction of its significance and the degree of emotional involvement in it with the use of intellectual methods of rationalization, attention switching, withdrawal, and devaluation. In the group of students with a marginal level of perceived stress, a combination of constructive coping strategies with dominance was determined among the predominant strategies for overcoming stress: «Taking responsibility» ($68,1 \pm 1,6\%$), which reflects a certain degree of maturity and independence of the individual, which manifested itself in the form of recognition by the subject of his role in the emergence of the problem and responsibility for its solution; «Positive reappraisal» ($65,2 \pm 1,3\%$), which reflects an individual's ability to see the positive aspects of a current stressful (negative) situation through cognitive processing, to find acceptable ways of living in unpleasant life circumstances and «Planning a solution to the problem» ($53,7 \pm 1,5\%$), which is implemented in overcoming the problem due to a purposeful analysis of the situation and possible options for behavior, developing a strategy for solving the problem, planning one's own actions taking into account objective conditions, past experience and available resources. The conducted study of stress coping mechanisms confirms the hypothesis that, with a fairly wide repertoire of them, students with a high level of perceived stress extremely rarely used the adaptive coping strategy «Planning to solve the problem» and the relatively adaptive coping «Positive reappraisal», which is due to: low ability these persons to a positive reassessment of the situation with a focus on the growth of their own personality; inability to plan a solution to the problem; low ability to mobilize problem-oriented efforts to change the

situation. The predominance of maladaptive coping strategies in the repertoire of this group of students led not to solving problems, but to the accumulation and gradual synchronization of internal stress, which contributed to a general decrease in resilience.

As a result of the research, a high and extreme level of perceived stress was found in the vast majority of first bachelor level higher medical education graduates, which reflected the extremely negative impact of multicomponent stress on the success of studies in general, physical and psychological well-being of students. Students with a low degree of resilience demonstrated a high degree of stress load against the background of the predominance of the formation of maladaptive strategies of coping behavior, therefore they belong to the risk group of the development of psychosomatic disorders and adaptation disorders, they need psychological support in order to optimize the psychological resources of the individual to successfully cope with the state of stress, to minimize its negative impact, formation of sustainable methods of protective behavior and coping, which in turn will be a guarantee of preserving the health of future employees of the health care system. The ability to effectively cope with stressful situations, using resilience resources, will help students not only to be socially-adapted individuals who make responsible decisions in professional activities and effectively interact with people, but also to maintain health by abandoning destructive ways of coping with stress.