

# **MODERN SCIENTIFIC TECHNOLOGIES AND SOLUTIONS OF SCIENTISTS TO CREATE THE LATEST IDEAS**

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## **CHARACTERISTICS OF THE ADAPTATION CAPABILITIES OF THE ORGANISM OF MODERN STUDENTS: CONNECTIONS AND INTERDEPENDENCES**

**Serheta Ihor**

Doctor of Medical Sciences, Professor,  
Head of the Department of General Hygiene and Ecology  
National Pirogov Memorial Medical University,  
Vinnitsya, Ukraine

**Drezhenkova Inna**

Candidate of Biological Sciences, Associate Professor,  
Associate Professor of the  
Department of General Hygiene and Ecology  
National Pirogov Memorial Medical University,  
Vinnitsya, Ukraine

**Stoyan Nataliya**

Candidate of Medical Sciences, Associate Professor,  
Associate Professor of the  
Department of General Hygiene and Ecology  
National Pirogov Memorial Medical University,  
Vinnitsya, Ukraine

One of the most significant problems of comprehensive assessment of the state of health of young woman and young man receiving higher education, which requires adequate solution, is the implementation of a prognostic assessment of the peculiarities of the course of adaptation processes of students and, above all, the processes of social and psychological, psychophysiological and mental adaptation that take place in the organism of a person who acquires a certain profession in the conditions of study within the walls of higher educational institutions. This approach involves either the use of statistical models, or the creation of scales for a complex point assessment of the peculiarities of the course of adaptation transformations, which allow a detailed study of the processes taking place, a generalized interpretation of the established patterns, and predicting the prospects for the further development of the studied objects [1, 2, 3, 4, 5, 6, 7].

In the course of research conducted among students of various courses of the National Pirogov Memorial Medical University a number of hygienic, psychophysiological and psychodiagnostic methods were used. In particular, the assessment of functional features of higher nervous activity led to the determination of latent periods of simple and differentiated visual-motor reaction, indicators of mobility and balance of nervous processes based on the use of chronoreflexometry techniques,

characteristics of attention stability and features of mental performance were studied using Schulte tables, functional features of visual sensory system and the somatosensory analyzer were studied on the basis of the assessment of the values of the critical frequency of the fusion of light flashes and the coordination of movements using the "Light test" and tremometry techniques. Characteristics of temperament properties were evaluated based on the use of the Eysenck questionnaire, indicators of situational and personal anxiety – using the Spielberger questionnaire, character properties – using the Mini-mult and Shmishek questionnaires, the level of subjective control – thanks to the use of the Rotter questionnaire, features of neuropsychological states and the degree of expression of asthenic and depressive states – based on the use of Lüscher's color selection test method, Malkova's questionnaire and Tsung's psychometric scale for self-assessment of depression.

The obtained results were subjected to statistical processing using standard packages of multidimensional statistical analysis application programs "Statistica 6.1" (license № BXXR901E245722FA), which made it possible to establish the peculiarities of the relationships between the characteristics of the functional state of the organism, the level of development of psychophysiological functions and personality traits and criterion indicators of professionally-oriented educational success based on the construction of statistical models using the procedures of descriptive statistics, correlation and regression analysis.

The analysis of the received data, which was obtained thanks to the use of leading methods of correlation analysis of the studied indicators, the purpose of which is to establish the functional interdependence of the characteristics of a certain population being studied, by determining the degree of their proximity in the multidimensional space of the studied indicators, first of all, made it possible to reveal the peculiarities of the interrelationships of the criteria signs of the success of the processes of professional formation and professionally conditioned psychophysiological and mental adaptation of students who studied medicine in a higher educational institution. In particular, the fact that the level of academic success in medical-theoretical and professionally-oriented subjects in a higher educational institution is the most closely related to girls (only statistically significant correlations are shown:  $p < 0.05$ – $0.001$ ) data on the duration of night sleep ( $r = -0.38$ ) and the degree of learning intensity ( $r = 0.44$ ), characteristics of the main nervous processes ( $r = -0.43$ ), indicators of the speed of a simple visual-motor reaction ( $r = -0.39$ ) and coordination of movements ( $r = -0.44$ ), level of neuroticism ( $r = -0.43$ ), situational ( $r = -0.45$ ) and personal ( $r = -0.41$ ) anxiety, psychohygienic correlates of asthenic ( $r = -0.40$ ) and depressive ( $r = -0.38$ ) states, as well as data on the general internality of the level of subjective control ( $r = 0.32$ ), among young men – indicators that noted the degree of prevalence of cases of additional paid work in extracurricular time in order to improve one's material well-being ( $r = 0.45$ ), the level of well-being at the end of the school day ( $r = 0.41$ ), the presence of certain personal problems (feeling of constant fatigue, poor health etc.) ( $r = 0.43$ ), characteristics of the main nervous processes ( $r = -0.41$ ), coordination of movements ( $r = -0.56$ ) and the efficiency of the activity performed ( $r = 0.56$ ), the degree of neuroticism ( $r = -0.43$ ), situational ( $r = -0.45$ ) and personal ( $r = -0.41$ ) anxiety, the

expression level of indicators of depression (D) ( $r=-0.45$ ) and psychopathy (Pd) ( $r=0.43$ ), psychohygienic correlates of the neuropsychological state ( $r=0.41-0.53$ ), the degree of expression of dysthymic ( $r=-0.46$ ) and anxiety ( $r=-0.44$ ) accentuation indicators types, as well as data on the level of subjective control in the field of family ( $r=0.46$ ) and professional ( $r=0.47$ ) relationships, as well as in the field of attitudes to health and illness ( $r=0.37$ ).

So, the results of the correlation analysis testified to the existence of sufficiently close and stable interrelationships between the criterion signs of the success of the processes of professional formation and professional adaptation of students and a number of indicators of the level of educationally significant adaptation, features of the functional state of the body and features of the personality of young woman and young man and, above all, indicators, which reflected such leading correlates of psychophysiological and mental adaptation as the degree of expression of the characteristics of neuroticism, situational and personal anxiety, asthenic and depressive state, accentuations of character, level of subjective control, speed of sensorimotor reactions and balancing of basic nervous processes.

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