

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

Серія «Наука»

## **ЛІКИ – ЛЮДИНІ.**

### **СУЧАСНІ ПРОБЛЕМИ ФАРМАКОТЕРАПІЇ І ПРИЗНАЧЕННЯ ЛІКАРСЬКИХ ЗАСОБІВ**

Матеріали III Міжнародної  
науково-практичної конференції

У двох томах

Том 1

14-15 березня 2019 року  
м. Харків

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**Ліки** – людині. Сучасні проблеми фармакотерапії і призна-  
Л 56 чення лікарських засобів»: матеріали III Міжнар. наук.-практ.  
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Збірник містить статті і тези доповідей III Міжнародної науково-практичної конференції «Ліки – людині. Сучасні проблеми фармакотерапії і призначення лікарських засобів», де розглядаються проблеми фармакотерапії захворювань людини, наводяться результати експериментальних та клінічних досліджень, аспекти вивчення й упровадження нових лікарських засобів, доклінічні фармакологічні дослідження біологічно активних речовин природного і синтетичного походження. Наведено також праці, присвячені особливостям викладання медико-біологічних і клінічних дисциплін у закладах вищої освіти.

Видання розраховано на широке коло наукових і практичних працівників медицини і фармації.

Відповідальність за зміст наведених матеріалів несуть автори.

**УДК 615:616-08**

## Частина I

### СТАТТІ WAYS FOR INCREASING STRESS RESISTANCE OF MODERN MEDICAL STUDENTS

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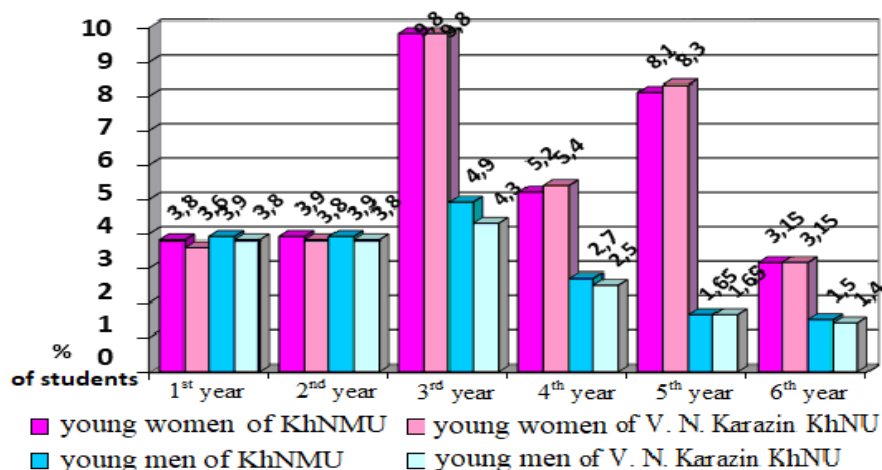
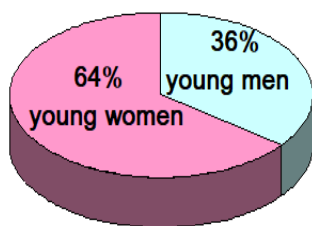
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Stress is one of the most urgent problems of our time, particularly among students of medical universities. Scientific and technological progress of the modern society and an extreme intensification of life give rise to the development of so-called “diseases of civilization”, stress being their pathogenetic basis. It is stress that is recognized as the cause and aggravating factor for development of the majority of psychosomatic pathologies in the modern social medium, including immunopathies, oncopathology and reproductive dysfunctions. The pernicious influence of stress rapidly “rejuvenates” the appearance of such medical-social phenomena of the society as alcoholism, narcomania, suicidality, disability, decreases in the duration and quality of life; on the general social scale, it is stress that has become the problem for mankind’s survival.

The search for ways to prevent stress-producing medical-social consequences in order to preserve human vitality and working capacity is obviously priority. The modern individual has to both adapt oneself to constant stress situations and transform their damaging action into restorative, training and adaptive [1-2].

The purpose of the present study consisted in the revealing of the main provoking factors for stress development and of possible variants for their resolution among students of medical universities.

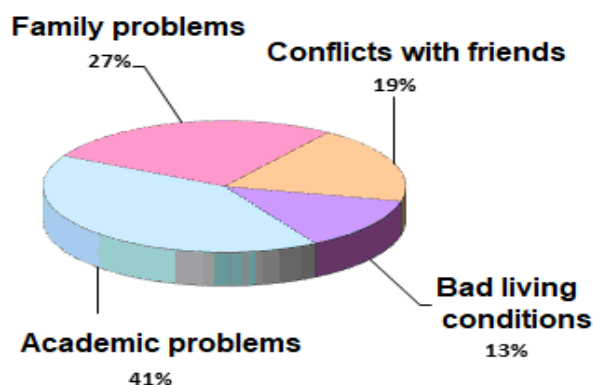
**Materials and methods.** An original questionnaire was drawn up for finding out urgent stress-producing causes, the degree of stress resistance of modern medical students and the main ways for struggling against stress manifestations. This questionnaire survey embraced students of medical faculties of Kharkiv National Medical University (KhNMU) and of V. N. Karazin Kharkiv National University (KhNU). As it is seen from the figures presented, the population of responders consisted of young women (64 %) and young men (36 %), the most profound interest being manifested by third- and fifth-year female students of our higher schools:



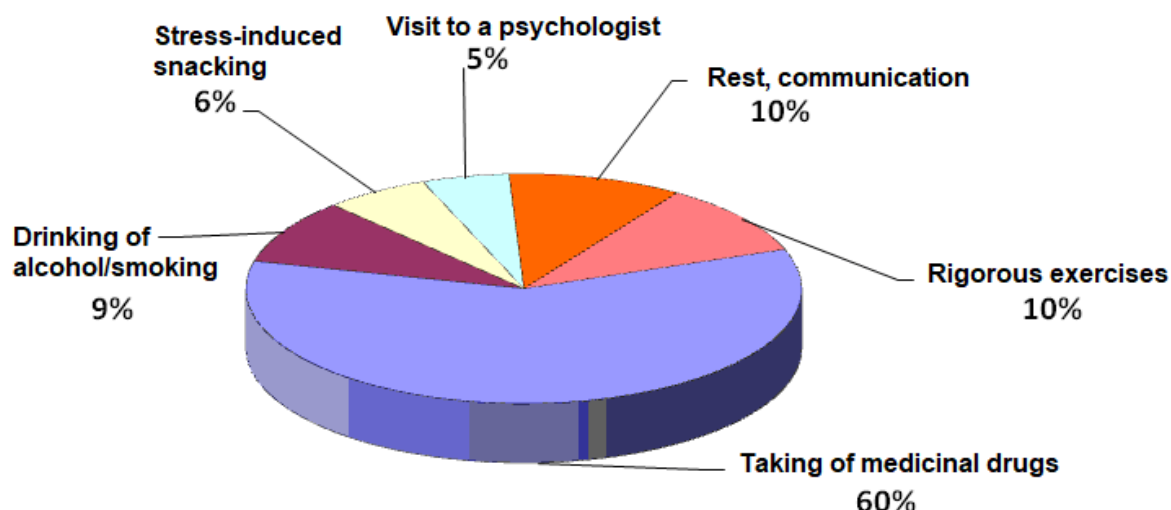
**Results and discussion.** Stress is known to be the state of psychic tension of the whole organism resulting from effects of psychological or physiological factors. It is important to note that the above state is a protective response of the organism to both different environmental stimuli and the person's own consciousness.

For modern students, stress is an everyday and already common occurrence. In a small amount the so-called "mild short-term stress" is harmless and even useful, but its excess and a loss of control create big problems for the organism. These problems start speaking for themselves, when stress situations become numerous, each one overlaps another and finally all of them are summarized. With time this phenomenon as a "vicious circle" results in different nervous disturbances and disruptions in the normal functioning of the organism [3-4].

Analysis of the respondents' answers revealed that the main stress-causing factors were as follows: 41 % of students had academic problems, 27 % complained of family problems, 19 % had conflicts with their friends, and 13 % (nonresidents) had bad living conditions.



The most popular way for coping with their stress in 60 % of the responders consisted in taking special medicinal drugs just with properties of stress protectors:



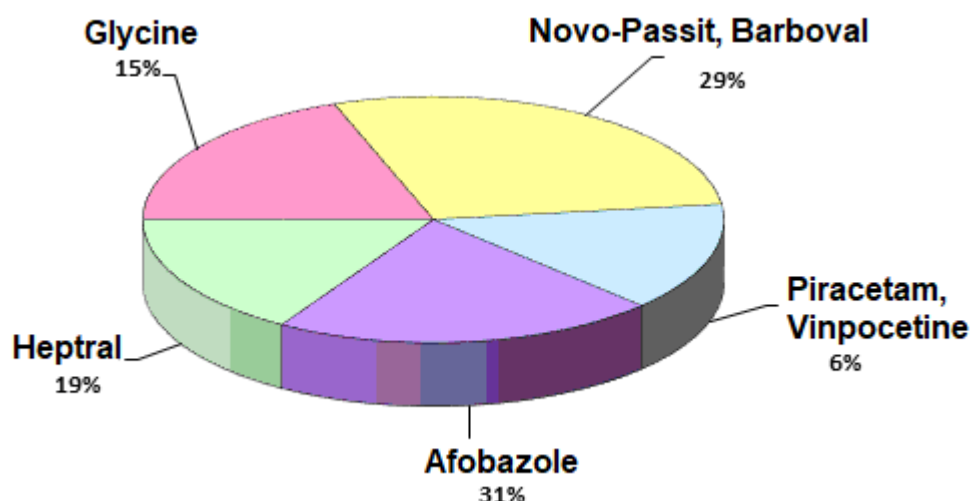
Probably it is the study of special subjects in pharmacology, therapy, psychology, neurology and other clinical departments in the 3<sup>rd</sup> and 5<sup>th</sup> years of medical faculties that aroused the professional interest of the above students in the problem of the damaging action of stress on their own health and on the choice of means for correcting this state.

Stress protectors, or antistress drugs, are the special pharmacological group of medicinal drugs that have the advantage of a wide spectrum of central and peripheral defence mechanisms for the central nervous system and all executive organs just in stress conditions.

The mechanism of their action is contingent on physiological stress-limiting mechanisms, which are inherent in the organism. They stimulate natural physiological defence mechanisms by normalization of self-regulation functions, mobilization of autonomic defence reactions as well as by coordination of hormonal-metabolic and bioenergy processes with the functional state of vital organs at all levels of organization: systemic, organ, tissue, cellular, subcellular and molecular.

Here stress protectors are means for both pathogenetic and etiotropic treatment of diseases with stress genesis, limiting responses of stress-realizing systems of the organism [1-2, 5].

Afobazole®, a modern selective nonbenzodiazepine anxiolytic, turned out to be the most popular one among medicinal drugs for anti-stress correction in the students (31 %). Producing its effect on  $\sigma_1$  receptors in nerve cells of the brain this drug stabilizes GABA/benzodiazepine receptors and restores their sensitivity to endogenous inhibitory mediators. Also Afobazole increases the bioenergy potential of neurons and produces the neuroprotective effect (restoring and protecting nerve cells from various pathogenic factors):



The sedative and anxiolytic drug Novo-Passit proved to be popular in 29 %, mostly in the young women. This is a combination drug, whose pharmacological activity is caused by its components: rhizomes and roots of common valerian (*Valeriana officinalis*), herb of melissa (*Melissa officinalis*), herb of common Saint-John's wort (*Hypericum perforatum*), leaves and flowers of common hawthorn (*Crataegus laevigata*), herb of passionflower (*Passiflora incarnata*), multiple fruits of common hop (*Humulus lupulus*), flowers of European elder (*Sambucus nigra*) and guaiphene-sin. The majority preferred to combine taking of Novo-Passit with Barboval (a hypnotic drug).

Also popular was Heptral (19 %). It belongs to the group of hepatoprotectors, manifests antidepressant activity, produces choleretic and cholekinetic effects, has detoxicative, regenerative, antioxidant, antifibrotic and neuroprotective properties, compensates for a deficiency of S-adenosyl-L-methionine (ademetionine) and stimulates its production in the organism.

Glycine became the drug of choice for struggling against stresses in 15 % of the surveyed students. This is an inhibitory neurotransmitter and regulator of metabolic processes in the brain and spinal cord. This amino acid normalizes processes of excitation and inhibition, increases mental capacity to work, relieves depressive disorders and increased irritability.

The traditional nootrop Piracetam as a stress protector and the drug Vinpocetine for improving their cerebral circulation and cerebral metabolism were chosen by 6 % of the students.

For 10 % of the surveyed students their effective ways for changing from stress situations were as follows: rigorous exercises, visits to gymnasias and fitness clubs as well as other varieties of outdoor activities. Other 10 % of the students preferred communication with their families, relatives and close friends; they wanted to have an opportunity to enjoy a good physical and emotional rest alone or in the circle of their families, to replace or change their stress-producing environment at least for a while, to go in for their hobbies.

Unfortunately, as many as 9 % of the young men and women were confident that smoking and alcohol were the panacea for any stress, self-control being abso-

lutely lost over both stress and the amount and quality of the alcohol (often even surrogate!) drunk and cigarettes (even if they were electronic) smoked.

The habit, induced by stress, to eat an excess amount of food that as a rule does not meet criteria of healthy, correct, balanced and sound nutrition at all is by far a mutually confounding factor; it was done by 6 % of the surveyed students.

We found an interesting fact: 5 % confessed that in difficult stress situations they were not able to take decisions by themselves and applied for professional help of psychologists and psychoanalysts.

### Conclusions

Results of the conducted study provide strong evidence that all students are more or less subjected to stress situations. On the basis of our questioning we found out that the main stress-producing factors for medical students were as follows: academic and family problems, conflicts with friends as well as bad living conditions. Analysis of the findings revealed that taking of special anti-stress medicinal drugs constituted a greater part among ways for relieving stress. Our survey showed that the amino acid Glycine and the tranquillizer Afobazole in the young women and the sedative and hypnotic drug Barboval in the young men were the most popular medicines for preventing and treating stress. Also popular in the modern young people are non-drug ways for increasing their stress resistance, but some of these methods, unfortunately, do not meet principles of a healthy lifestyle.

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