

Halyna DUBCZAK, Dr. Hab
ORCID ID: 0000-0002-4062-979X
e-mail: halinadubczak@gmail.com
Cardinal Stefan Wyszyński University, Warsaw, Poland

Lyudmila SERDYUK, Dr of Sci. (Psychology), Prof.
ORCID ID: 0000-0001-8301-4034
e-mail: lzserdyuk15@gmail.com
Institute of Psychology named after G. Kostyuk, Kyiv, Ukraine

Tetyana TRAVERSE, Dr of Sci. (Psychology), Prof.
ORCID: 0000-0002-9031-1173
e-mail: traversay@ukr.net
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

EDUCATIONAL STRESS: HOW ARE UKRAINIAN STUDENTS DEALING WITH IT

B a c k g r o u n d . This study was intended to draw the attention of researchers and specialists to the need for a comprehensive consideration of the problem of stress in educational activities. The purpose of the study was to study what is the level of stress among modern Ukrainian students and if it has changed in the last 10 years. What is the most common cause of learning stress? What are the manifestations of stress in modern students? How are students coping with stressful situations in their daily lives? Are there any differences in the features of the educational stress of men and women, as well as of students of higher and vocational schools?

M e t h o d s . The study uses the technique of educational stress, which is a self-descriptive scale that allows you to identify: the main causes of academic stress; the level of academic stress; manifestations of stress in academic activities; methods for relieving stress; the level and main signs of exam stress. The analysis was performed on a group of 600 students (including 316 university students, 284 students of vocational schools; 283 men and 317 women) aged 15-45 years.

R e s u l t s . It is found out that for the majority of Ukrainian students the main stressful situations are related to learning activities; least stressful - to group conflicts and cohabitation problems with other students. The level of examination stress of today's students is significantly higher than decades ago; it is significantly higher for university students than for students in vocational schools; for female students it is higher than for male students. The most common manifestations of learning stress are behavioural; the least pronounced are physiological. It has been found that gender and the choice of stress relief are related.

C o n c l u s i o n s . The conclusions is made about the need of organization of specifically targeted psychological work with students having high manifestations of educational and examination stress.

K e y w o r d s : students, educational stress, exam stress, stress factors, stress states.

Background

Educational activities in university are one of the most challenging activities. The educational period for young learning people is a long and complex process that requires a lot of mental and physical efforts, emotional stability, psychological balance, achievements of goals, and overcoming of stress, especially during examinations (Hales, 2009; Ringeisen, 2008; Bland et al., 2012; Conner, Pope & Galloway, 2010).

The psychological literature has a lot of studies describing psychological aspects of stress (Antonovsky, 1979, 1987; Asberg, Bowers, Renk, & McKinney, 2008; Bardeen, Fergus, & Orcutt, 2016; Felton, Banducci, Shadur, Stadnik, MacPherson, & Lejuez, 2017; Folkman, 2008; Gawrysiak, Leong, Grassetti, Wai, Shorey, & Baime, 2016; Hammen, 2005; Hobfoll, 2006; Lazarus, & Folkman, 1984; Monroe, 2008; Seiffge-Krenke, Aunola, Nurmi, 2009; Selye, 1960, 1977; Simmons, & Nelson, 2007 and others).

Stress is defined as a complex response of the body to stimuli that disrupt its homeostasis (Carlson & Heth, 2007). In modern times, it is understood in psychology triple – as reaction, stimulus, and transaction (Morys, & Jeżewska, 2006). Stress occurs at the biological and psychological level in humans (Schneiderman, Ironson, & Siegel, 2005). Modern researchers pay special attention to the identification of determinants of resistance to mental stress, its manifestations, as well as the role in the professional development of professionals (Le Blanc, de Jonge, & Schaufeli, 2007; Maslach & Leiter, 2011; Simmons & Nelson, 2007). Stress reactions of the human body as a

response to social impact are attracting increased attention from such scientists as Derbis & Baka, 2011; Ogińska-Bulik, 2006, and others.

Problem statement. However, not many works are dedicated to the problem of stress and stress situations in educational activities, although recently the interest of researchers in this field has increased (Kraemer, Luberto, O'Bryan, Mysinger, Cotton, 2016; Melaku, Mossie, & Negash, 2015; Qamar, Khan, & Bashir Kiani, 2015; Rosiek, Rosiek-Kryszewska, Leksowski, & Leksowski, 2016; Sheykholeslami, Kiani, Ahmadi, Soleimani, 2016).

It should be noted that the main focus of research is on the study of certain aspects of the problem of stress in learning. Most often, the subject of interest is the choice of student strategies that allow them to cope with stress (Brougham et al., 2009; Palmer & Rodger, 2009), particularly in relation to substance use (Chen & Feely, 2015; Digdon & Landry, 2013; Howard, Schiraldi, Pineda, Campanella, 2006; Kuntsche, Knibbe, Gmel & & Engels, 2005; Rutledge & Sher, 2001; Tomaka, Morales-Monks & & Shamaley, 2013; Welle & Graf, 2011; Woolman, Becker, & Klanecky, 2015). Böke, Mills, Mettler, & Heath (2019) studied gender-specific substance use as a coping strategy for men and women.

Based on A. Antonovsky's view: in work with young people, you should first and foremost focus on those health-causing components (salutogenesis), rather than finding out the causes of the disease (pathogenesis). Paraphrasing these words in relation to a given research problem: in studying the educational stress and stress resistance of

students, attention should be paid to those conditions and factors that contribute to its formation and allow for dealing with stress, and not only to the problems of its development.

Research objective. This study was intended to draw the attention of researchers and specialists to the need for a comprehensive consideration of the problem of stress in educational activities. Although the problem of stress has been widely studied across Western populations, it is important to study the universality and cultural specificity of educational stress in different countries, including those with the educational system formed during the former Soviet Union. Accordingly, the analysis of psychological features in the characteristics of educational stress of modern Ukrainian students will not only validate the applicability and generalizability of stress theories in different cultural contexts, but also improve the field's understanding of the universality and cultural specificity of theoretical constructs. The purpose of the study was to study what is the level of stress among modern Ukrainian students and whether it has changed in the last 10 years. What is the most common cause of learning stress? What are the manifestations of stress in modern students? How are students coping with stressful situations in their daily lives? Are there any differences in the features of the educational stress of men and women, as well as of students of higher and vocational schools?

Literature review. According to the theory of stress in the cognitive assessment of Lazarus, & Folkman (1984), psychological stress can occur when people perceive environmental requirements as a threat to their own well-being. A type of psychological stress is educational stress, which is related to the stressful effects of the components of the educational process.

It should be noted that today there is no comprehensive definition of educational stress, but it is possible to distinguish the features that determine it, namely, educational stress occurs when a student feels stress caused by different requirements, and cannot cope with them, because these requirements exceed his adaptive resources.

Research results strongly suggest that learning stress triggers emotional reactions that predominantly negatively affect the body, the processes of attention, thinking, memory, and, in general, the success of students' learning activities (Childs, Finnie, & Martinello, 2016; Galambos, Vargas, Lascano, Howard & Maggs, 2013; Lovell, Nash, Sharman & Lane, 2015; Pluut, Curșeu, & Ilies, 2015). Difficulties with academic performance, in turn, cause discomfort, which exacerbates the overall stress (Durand-Bush et al., 2015; Holinka, 2015).

Factors that contribute to the development of stress among students are the lack of time, conflicts with classmates, friends, relatives and teachers, poor performance, the need to combine work and study, too much academic load, lack of sleep (Suldo et al., 2009; Verger et al., 2009).

One of the forms of educational stress is examination stress. Factors leading to its occurrence are: sleep disorders, increased intellectual load, emotional distress, decreased intensity of physical activity, as well as personal factors such as, for example, anxiety level.

Exam expectations and the psychological strain associated with this are manifested in students in a variety of forms: fear of the examiner, experiencing the expectation of receiving a negative grade for the exam, and so on. Several studies have found that during the exam session, students have a marked violation of the autonomic regulation of the cardiovascular system, increasing the level of muscular and psycho-emotional tension (Zunhammer et al., 2013; Šimić & Manenica, 2012; Rosiek, Rosiek-

Kryszewska, Leksowski, & Leksowski, 2016; Ruzhenkova, Ruzhenkov, Zhernakova, & Gomelyak, 2017).

Recent studies have shown that the level of educational stress of modern students is much higher than decades ago (Durand-Bush, McNeill, Harding & Dobransky (2015). Most psychological research is devoted to the educational stress of first-year students (Reisbig, Danielson, Wu, Hafen, Krienert, Girard, & Garlock, 2012; Ruzhenkova, Ruzhenkov, Zhernakova, & Gomelyak, 2017).

Some authors believe that the risk of experiencing emotional disorders among students occurs in the first years of studying, reaching a maximum at the third year of studying (Vaez, 2004). Bewick, Koutsopoulou, Miles, Slaa, & Barkham (2010) found that the level of psychological well-being of university students declined during their studies. This problem still needs clarification.

An interesting aspect of research is the study of the gender characteristics of educational stress (Böke et al., 2019; Brougham et al., 2009). Most authors believe that gender influences the experience of stress. However, in relation to educational stress, some authors believe that there are no differences between men and women in the levels of stress caused by academic stressors (Brougham et al., 2009).

Also, the opinions of authors regarding coping behavior strategies are different. There are a number of attempts to classify them. Thus, Lazarus and Folkman (1984) proposed two styles of coping: problem-focused coping and emotion-focused coping. Another well-known classification is the division of coping styles and behaviors into adaptive or non-adaptive ones (Brougham et al., 2009). Although recent studies have noted that not always non-adaptive coping styles lead to negative results, and adaptive styles lead to positive ones (Palmer and Rodger, 2009).

Most authors focus on non-adaptive student behavior, in particular use of alcohol (Adlaf et al., 2005; Böke et al., 2019; Merrill & Read, 2010), drugs (Arria, Caldeira, Bugbee, Vincent, & O'Grady, 2015; Holloway, Bennett, Parry, & Gorden, 2014; Kuntsche et al., 2005; Simons, Gaher, Correia, Hansen и Christopher, 2005; Sinha, 2008; Coleman & Trunzo, 2015). It would be interesting to study what external resources are most commonly used by modern Ukrainian students to cope with stress and meet the demands of the environment.

It is important to note that the intensity of stress response in a person depends not so much on the characteristics of the stressor, but on the personal significance of the factor, because the same situation that arises in the learning process leads to different manifestations and consequences among different students. Therefore, not for all students educational stress is damaging. In certain situations, psychological stress can have a stimulating effect, helping the student to mobilize all his knowledge and personal resources to solve the tasks. Successful learning activities, successful performances at seminars, and effective communication with the teacher during the passing of colloquiums and test scores can contribute to improving self-esteem and well-being of the student.

These stress reactions to sociogenic factors emphasize the need for a personal approach to this problem. Therefore, the study of the psychological aspects of educational stress of modern students is an important aspect of modern psychological research, not only in theory but also in practical terms, particularly to meet the challenges of prevention, early diagnosis, and correction of various psychological disorders of students, and also to increase their efficiency in their education and future careers.

Methods

The study uses the technique of educational stress, which is a self-descriptive scale that allows you to identify: the main causes of academic stress; the level of academic stress; manifestations of stress in academic activities; methods for relieving stress; and the level and main signs of exam stress.

According to the *first goal* of our study: what is the level and causes of stress in modern students and whether they have changed in the last 10 years - the students were asked to carefully read the entire list of educational problems and evaluate the contribution of each problem to the overall picture of stress (on a 10-point scale from 1 (never) to 10 (always)). The results obtained were compared with those of students in 1-3 years of humanities disciplines, obtained by the author of the method.

Concerning the *second goal*: what are the manifestations of stress in modern students, and the *third goal*: how students cope with stressful situations in their daily lives - the students had to select from the offered list their own manifestations of stress and ways of dealing with stress. In the absence of the required answer, students had the opportunity to write their own answer.

The *fourth goal* was to study the features of exam stress, namely how much students worry before the exams (score on a 10-point scale from 1 (never) to 10 (always)) and what signs of exam stress they have observed in themselves (select from the suggested list) students also had the opportunity to write their own answer.

The *fifth goal*: whether there were differences in the features of educational stress of men and women, as well as of students of higher and vocational schools, was researched simultaneously with the solution of the previous problems.

The processing of the obtained empirical data was carried out using the statistical software package SPSS 21.0 for Windows.

According to the tasks assigned, research data was processed applying methods of mathematical statistics: descriptive statistics (mean, std. deviation, frequencies), independent samples T-test for independent groups, chi-square. Normality of data distribution was checked based on the Kolmogorov-Smirnov test. The distribution of all scales is normal ($p>0,05$).

This study was conducted at higher and professional educational institutions of Kyiv and Chernivtsi (Ukraine). A total of 600 students participated, including 316 university

students and 284 vocational schools students, which is respectively 53% and 47%.

The age of the surveyed students is from 15 to 45 years ($M=18,89$; $SD=3,15$). The average age of university students ($20,14\pm3,69$) is significantly higher than that of vocational schools ($17,36\pm1,14$) ($p<0,001$). The surveyed sample included 283 men and 317 women.

Chi-square test confirmed homogeneity of student groups by gender, specialty, and types of educational organization ($p\geq0,05$; ni).

The participants of the research were informed that the purpose of the study was to study the psychological characteristics of educational stress and asked to give honest answers. Students consented to participate in the study through signed consent forms. The researchers were also warned that they had the right to discontinue the study at any time without giving reasons and that the results would not be disclosed to third parties. All procedures were approved by the university research ethics board.

Results

The analysis of the level and causes of educational stress of modern students. The quantitative data, presented in Table 1, indicates that certain problem significance in the overall picture of modern students' stress is much higher than that of research conducted more than a decade ago.

The t-Student test shows that the importance of problems related to students' educational activities (heavy academic load, lack of textbooks, strict teachers, unwillingness to learn), psychological (fear of the future) and problems related to everyday life (irregular meals) ($p<0,05$) increased particularly. At the same time, problems related to personal life, conflicts in the group, and living away from their parents are substantially less important.

Comparison of the study groups of students by gender shows that the most stressful situations for male and female students are the situations related to educational activities. In addition, the problems, especially stressful for female students are fear of the future and irregular meals, whereas these problems for boys are less important on the statistically significant level ($p<0,001$). It should be emphasized that the importance of most of the problems in the overall stress picture is statistically higher for female students than for male students ($p<0,001$). But differences in the importance of the problems associated directly with educational situations are not statistically significant ($p>0,05$).

Table 1

Problem	Total sample			Women		Men		University students		Vocational school students	
	Ma	M	SD	M	SD	M	SD	M	SD	M	SD
Strict teachers	4,8	5,37***	2,38	5,32	2,30	5,56	2,26	5,56	2,26	5,16*	2,49
Heavy academic load	3,4	6,77***	2,43	6,74	2,37	6,82	2,04	6,82	2,04	6,73	2,79
Lack of textbooks	4,1	5,18***	2,90	5,35	2,85	5,67	2,93	5,67	2,93	4,63***	2,77
Obscure, boring textbooks	5,0	5,04	2,78	5,04	2,89	5,29	2,77	5,29	2,77	4,75*	2,78
Living away from parents	5,0	4,59*	3,24	4,93	2,70	5,06	3,24	5,06	3,24	3,59***	3,01
Inability to allocate properly finances	3,4	4,00***	2,63	4,21	2,62	4,07	2,58	4,07	2,58	3,93	3,01
Inability to organize daily routine	3,6	3,97***	2,56	4,43	2,52	4,49	2,52	4,49	2,52	3,39***	2,49
Irregular meals	3,6	4,78***	2,89	5,37	2,84	5,05	2,78	5,05	2,78	4,48*	2,99
Problems of cohabitation with other students	2,7	3,01	2,69	2,92	2,60	2,97	2,45	2,97	2,45	3,06	2,96
Conflicts in the group	3,1	2,83**	2,36	3,29	2,56	2,59	2,20	2,59	2,20	3,10*	2,52
Excessively serious attitude to learning	3,8	4,00	2,65	4,26	2,60	4,34	2,70	4,34	2,70	3,62***	2,54
Unwillingness to learn	2,5	3,78***	2,73	4,00	2,82	3,90	2,80	3,90	2,80	3,65	2,64
Awkwardness, shyness	3,3	4,07***	2,73	4,39	2,95	4,18	2,76	4,18	2,76	3,95	2,69
Fear of the future	3,6	4,84***	2,96	5,44	3,05	5,00	2,78	5,00	2,78	4,67	3,15
Problems in personal life	5,3	3,81***	3,06	4,25	3,14	4,17	2,95	4,17	2,95	3,41**	3,14

Ma - the average value from 2006, * $p<0,05$; ** $p<0,01$; *** $p<0,001$.

Analysis of the results of the study by the type of educational institution indicates that the common and most stressful situations for students of universities and vocational schools are situations related to educational activities, namely, heavy academic load and strict teachers. In addition, the particularly difficult situations for university students are ones associated with obscure, boring textbooks and their absence at all; such problems for vocational school students are statistically less significant, which is understandable, because universities pay more attention to theoretical training, while vocational schools pay more attention to practical aspects of vocations.

These data show that the most significant problems of university students are also living away from their parents, the importance of which is statistically higher than that for students of vocational schools ($p<0,001$).

The performed t-Student test reveals significant differences in the importance of most of the problems for modern students; the university students are more distressed because of these problems in comparison with vocational school students ($p<0,001$). But there are no statistically significant differences for the problems associated with heavy academic load, inability to allocate properly limited finances, cohabitation with other students, unwillingness to learn, or disappointment in a chosen profession, shyness, or fear of the future ($p>0,05$).

The analysis of the main educational stress manifestations in modern students

Another aspect of our study is the specifics of the main manifestations of stress associated with the educational activities of the students (see Table 2).

Manifestations of stress related to educational activities can be attributed to cognitive, behavioural, emotional, and physiological ones. The data in Table 2 shows that the most severe manifestations of educational stress of modern students are behavioural: haste, feeling of constant lack of time, and poor sleep; the least severe are physiological manifestations: gasp, problems with the gastrointestinal tract, stress, or muscle tremors.

A comparative analysis of our results with previous surveys shows that most manifestations of stress related to students' academic activities increased significantly over time, with the exception of some physiological manifestations, which decreased. Emotional manifestations such as low mood, depression, fear, and anxiety have not changed over time ($p>0,05$). The analysis of our results by gender shows that the most common manifestations of educational stress of female students are poor sleep and bad mood, headaches, feeling helpless, while male students complain mostly of poor sleep.

Table 2

Analysis of the manifestations of stress related to students' educational activities (N=600)

Stress manifestations	Total sample			Women		Men		University students		Vocational school students	
	Ma	M	SD	M	SD	M	M	M	SD	M	SD
Feeling of helplessness	4,0	4,31**	2,67	4,54	2,89	4,33	4,33	4,33	2,66	4,30	2,68
Inability to get rid of extraneous thoughts	4,7	4,21***	2,62	4,31	2,62	4,32	4,32	4,32	2,50	4,10	2,75
Poor concentration	3,8	4,28***	2,49	4,40	2,53	4,29	4,29	4,29	2,38	4,26	2,62
Irritability, resentment	3,5	3,99***	2,64	4,46	2,91	4,12	4,12	4,12	2,60	3,85	2,69
Bad mood, depression	4,4	4,28	2,82	4,64	2,92	4,41	4,41	4,41	2,74	4,14	2,92
Fear, anxiety	3,8	3,66	2,7	4,22	2,87	3,85	3,85	3,85	2,55	3,45	2,84
Loss of confidence, low self-esteem	2,9	3,37***	2,56	3,69	2,58	3,78	3,78	3,78	2,50	2,91***	2,55
Haste, feeling of constant lack of time	4,5	5,13***	3,01	5,32	2,83	5,49	5,49	5,49	2,71	4,72**	3,26
Poor sleep	3,9	5,38***	3,31	5,79	3,24	5,29	5,29	5,29	3,14	5,48	3,48
Breach of social contacts	2,6	3,37***	2,34	3,56	2,51	3,24	3,24	3,24	2,26	3,52	2,43
Heart palpitations, heart pain	2,6	3,00***	2,74	3,66	3,17	2,92	2,92	2,92	2,58	3,10	2,91
Shortness of breath	2,1	2,38**	2,38	2,78	2,71	2,49	2,49	2,49	2,05	2,26	2,02
Problems with the gastrointestinal tract	3,2	2,52***	2,46	2,92	2,68	2,72	2,72	2,72	2,49	2,29*	2,04
Tension or muscle tremors	2,8	2,26***	1,95	2,55	2,17	2,36	2,36	2,36	2,05	2,15	1,83
Headaches	4,9	3,71***	2,73	4,65	2,89	3,84	3,84	3,84	2,67	3,57	2,78
Low efficiency, permanent fatigue	5,0	3,93***	2,85	4,34	3,03	3,98	3,98	3,98	2,78	3,88	2,94

Ma - the average value from 2006, * $p<0,05$; ** $p<0,01$; *** $p<0,001$.

Physiological manifestations of stress: shortness of breath, problems with the gastrointestinal tract, and trembling muscles, are less likely for both male and female students. The differences in stress reaction manifestation between male and female students are statistically significant, such as the inability to get rid of extraneous thoughts, poor concentration, and a constant feeling of lack of time. It should be noted that female students' manifestations of stress reactions are significantly more pronounced than those of male students ($p<0,001$).

The data of research shows that the common educational stress manifestations for students of universities and vocational schools are behavioural ones: rush, feeling of constant lack of time, and poor sleep; the least severe manifestations are physiological: shortness of breath,

problems with the gastrointestinal tract, tension, or muscle tremors.

However, the identified differences are not statistically significant, except for loss of confidence, feeling of constant lack of time, and problems with the gastrointestinal tract, which are significantly more pronounced in university students than in vocational school students ($p<0,001$).

The analysis of the main methods to relieve stress used by modern students

The frequency analysis data presented in Table 3 shows that most students use socializing with friends or a loved one and sleep to relieve stress. Less often, students use such tools as fresh air, delicious food, support or advice from their parents, and physical activities. Some of the students (about 1,8-16,2% of the students) use such things to relieve stress as cigarette smoking, alcohol, and drugs.

The analysis of the research results by gender shows that there are statistically significant differences in use by male and female students of different de-stressing methods ($p<0,001$). To relieve stress load, female students often use sleep, socialising with friends or a loved one, walking outdoors, and parents' advice, whereas male students, besides sleeping and socializing with friends, use physical activities, delicious food, and sex. Students use drugs,

cigarettes, and alcohol, but male students use these substances more than twice as often as female students. Quite rarely, compared to male students, female students use sex to relieve stress. Based on the chi-square test, we can confirm that gender and chosen de-stressors are correlated, except for methods such as sleep, socializing with friends or a loved one, and drugs.

Table 3

Analysis of the main methods of stress relief used by the modern students (%) (N=600)

Method	Total sample		Men		Women		University students		Vocational school students	
	doesn't use	uses	doesn't use	uses	doesn't use	uses	doesn't use	uses	doesn't use	uses
Alcohol	85	15	78,8	21,2	90,05	9,5	83,5	16,5	86,6	13,4
Cigarettes	83,8	16,2	76	24	90,9	9,1	88,8	11,7	78,9**	21,1**
Drugs	98,2	1,8	97,2	2,8	99,1	0,9	100	0	96,1	3,9***
TV	63,5	36,5	52,7	47,5	73,2	26,8	71,5	28,5	54,6***	45,4***
Delicious food	51,3	48,7	41,3	58,7	60,3	39,7	53,2	46,8	49,3	50,7
Break in learning	62,3	37,7	59,7	40,3	64,7	35,3	58,9	41,1	66,2	33,8
Sleep	26,8	73,2	19,4	80,6	33,4	66,6	25,6	74,4	28,2	71,8
Socializing with friends	19,8	80,2	21,2	78,8	18,6	81,4	21,5	78,5	18	82
Parents' for	52,3	47,7	59,4	40,6	46,1	53,9	48,4	51,6	56,7*	43,3*
Sex	66,8	33,2	45,9	54,1	85,5	14,5	70,3	29,7	63,0	37,0
Walking	44,2	55,8	51,2	48,8	37,9	62,1	48,1	51,9	39,8*	60,2*
Hobby	64,5	35,5	54,8	45,2	73,2	26,8	71,8	28,2	56,3***	43,7***
Physical activities	55,5	44,5	36,0	64	72,9	27,1	52,2	47,8	59,2	40,8

The comparative analysis of the survey results by types of educational institution shows that there are statistically significant differences in using by the modern students of different methods of stress relief, namely, the vocational school students often use walking, hobbies, watching television, smoking cigarettes, and drugs, while the university students are seeking more often advices from parents ($p<0,001$). Vocational school students use alcohol, drugs, and cigarettes more than twice as often as university students, which is alarming and indicates the need for focused psychological work with students having high levels of manifestations of educational and examination stresses.

The comparative analysis of modern students' exam stress characteristics

An examination session is an important part of student life, which is another aspect of our study. We wanted to determine the level of students' examination stress and its main characteristics.

The data in Table 4 indicates that the level of students' exam stress equals to 7,25 points on a 10-point scale, which is alarming, as exams become the strongest factor that provokes stress appearance during educational years. This indicator is significantly higher than a decade ago ($p<0,05$).

Table 4

Analysis of the exam stress level for today's students (N=600)

Total sample				Women		Men		University students		Vocational school students	
Ma	SD	M	SD	M	SD	M	SD	M	SD	M	SD
6,00	0,35	7,27***	2,75	8,33	2,07	6,11***	2,93	7,63	2,17	6,89**	3,21

The fact is noteworthy that the examination stress level for female students is significantly higher ($M=8,3$, $SD=2,07$) than that for male students ($M=6,1$, $SD=2,93$). We also found that the level of examination stress of university students was significantly higher ($M=7,6$, $SD=2,17$) than that of vocational school students ($M=6,89$, $SD=3,21$).

The analysis of signs of students' exam stress shows that students have most often such a sign indicating the exam stress: palpitation, headache, or other pains. Such examination stress signs as shortness of breath, dry mouth, and stiffness, trembling muscles are manifested much less.

The comparative analysis by gender shows that the most common signs of exam stress for female students are heart palpitations and headache or other pains. Almost two-thirds

of male students complain of heart palpitations; other signs of exam stress are not significant for male students. The t-Student test shows significant differences in examination stress signs, which are more pronounced for female students, except for dry mouth and heart palpitations that occur with equal frequency for male and female students.

The data in Table 5 shows that most often exam stress signs for most students at universities and vocational schools are heart palpitations, and nearly every second student has a headache or other pains. Almost a third of the students complain of stiffness, muscle tremor, and dry mouth; other signs of exam stress were found in a small part of the students

Table 5
Analysis of exam stress signs of students (%) (N=600)

Exam stress signs	Total sample		Men		Women		University students		Vocational school students	
	Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present
Heart palpitations	27***	73***	38,2***	61,8***	17***	83***	27,2	72,8	26,8	73,2
Dry mouth	70,3	29,7	67,8	32,2	72,6	27,4	70,3	29,7	70,4	29,6
Shortness of breath	75,8	24,2	77,0	23,0	74,8	25,2	78,2	21,8	73,2	26,8
Stiffness, muscle tremors	68*	32*	73,1*	26,9*	63,4*	36,6*	70,6	29,4	65,1	34,9
Headache or other pains	57,8***	42,2***	66,3***	33,7***	50,2***	49,8***	57,8	42,2	57,7	42,3

Discussion and conclusions

According to the first goal of our study, our analysis showed that the level of stress in modern students has changed over the past 10 years, namely, it has increased substantially compared to the results obtained decades ago. These data are consistent with the results of studies conducted in different countries. This may indicate that the identified features are characteristic of nowadays and do not depend on the cultural or other characteristics of students. Stress is an integral part of the life of modern society. Increased levels of stress are exacerbated by the globalization of society, the division of the population on material, religious, and political grounds, the unsatisfactory overall level of human well-being, uncertainty about the future, etc.

The most common cause of educational stress is the problems associated with students' learning activities (high workload, lack of textbooks, harsh teachers, unwillingness to study, or frustration in the profession). This is facilitated by the complication of training programs, the imperfection of textbooks, the devaluation of human values of the younger generation, the negative impact of the information space, insufficient standard of living. It should be emphasized that these problems are equally relevant to both male and female students and are sources of their stress.

Thus, for modern Ukrainian students, the most pronounced are the stresses associated with learning activities, and the least pronounced are the stresses caused by group conflicts, which may not be present in their lives at the moment. Over time, the significance of problems associated with unnecessarily serious learning and incomprehensible, boring textbooks has not changed. Consequently, the problems that were identified over a decade ago remain a source of stress for modern students, and their severity has increased significantly.

As for other causes of student stress, an important source of stress for modern students is psychological problems, most often the fear of the future. This cause of stress in Ukrainian students was interesting for us to find. It should be noted that this may be connected to the difficult political and economic situation in Ukraine, in particular, the situation in Crimea and military events in the east of the country. Against this background, the urgency of problems in personal life as a cause of stress for students has sharply decreased. Decades ago, the causes of unrelated learning stress were dominated by privacy issues, and the level of fear of the future was significantly lower. The obtained results showed that female students reported higher levels of stress overall compared to male students. This is consistent with previous literature examining gender differences in university students' reports of stress (Brougham et al., 2009; Durand-Bush et al., 2015). However, the nature of these differences is not well explained in the literature (Brougham et al., 2009; Economos et al., 2008). At the time, there are also studies

showing that there are no gender differences in stress appraisals (Dyson & Renk, 2006). This issue should be addressed in future research.

Analysis of the results of the study by type of educational institution also showed the importance of educational situations as a source of stress for students. Moreover, the problems caused by the incomprehensible, boring textbooks and their absence are more relevant to university students than to students of vocational schools.

Analysis of the results of the study by type of educational institution also showed the importance of educational situations as a source of stress for students, and problems related to unclear, boring textbooks and their lack are more relevant to university students than vocational schools, because in Ukrainian universities more attention is paid to the study of theoretical disciplines, and in the vocational schools - to practical aspects of academic disciplines.

Other important causes of stress for university students are life away from their parents, inability to properly organize their daily routine, malnutrition, and problems in their personal lives, what is significantly less important for students at vocational schools. These differences can be explained by the fact that most students had to leave their hometown to study for their chosen specialty in university, whereas to go to vocational school, it is often enough to choose a vocational school close to home, often at your place of residence.

Other non-statistically significant problems, namely those related to high workload, inability to manage limited finances, problems of cohabitation with other students, unwillingness to study, shyness, fear of the future, are related more with the features of age development and with equal frequency are manifested in students of university and vocational schools.

Thus, the above data showed that in the lives of students of universities, there are significantly more stressful situations than in the lives of students of vocational schools.

Another aspect of our study was the concretization of the main manifestations of stress associated with students' learning activities. The analysis showed that the most pronounced manifestations of educational stress of modern students are behavioural, and the least pronounced are physiological. This may indicate the good health of the study group, and student stress is manifested mainly at the psychological level. It should be noted that in female students, the manifestations of stress reactions are significantly more pronounced than in male students. The nature of this addiction requires further study in future research.

Comparison by type of institution showed that loss of confidence, a sense of constant lack of time, and problems with the gastrointestinal tract are significantly more pronounced in university students than in students of vocational schools. The obtained data is in full agreement with previous findings, that in the life of university students

there are significantly more stressful situations than in students of vocational schools, and these are mainly caused by the need to live outside the parental home.

Another aspect of our study was the study of techniques used by modern students to relieve stress. In trying to cope with stress, people mostly rely not only on their own resources, but also seek a variety of support in their close environment. Expressions of active social support include direct help, advice, empathy, and a compassionate attitude. Discussing their feelings and reactions to them, constructing their own version of events, helps to distance the person from emotional experience or at least reduce its intensity (Spangler et al., 2002). The results of the analysis show that Ukrainian students use the same ways of coping with stress as their peers from other countries. Most often, this is socializing with friends or loved ones, sleeping, walking in the open air, good food, support or advice from parents, and physical activity (Kumar & Bhukar, 2013).

In a lonely effort to overcome stress by reducing the tension, young people may resort to harmful substances (alcohol, cigarettes, drugs, or stimulants) or potentially harmful tools (unprotected sexual intercourse, driving with excess speed, overeating, etc) (Economos, Hildebrandt & Hyatt, 2008). The results of the study show that some students actually use such tools as smoking cigarettes, alcohol, and drugs, which is worrying. The findings confirm the opinion of psychologists that there are statistical differences in the use of different techniques of stress relief by men and women. Male students use these tools more than twice as often as female students; students of vocational schools use these tools more than twice as often as university students. It should be emphasized that these individuals may require the psychological assistance of specialists in the effective methods of stress relief. This indicates the need for purposeful psychological work with students with high levels of educational and exam stress.

The empirical data obtained by a study conducted with the participation of modern Ukrainian students fully confirm the opinion of scientists that a common source of traumatic action for students is the examination session (Ringeisen, 2008; Bland et al., 2012; Conner, Pope & Galloway, 2010). Intense mental workload, working with a lot of information that must be learned in a short time, disturbance of the day mode, lack of sleep – all this contributes to examination stress. Besides, tests and exams can serve as factors that affect students' mood, well-being, psyche, and psycho-emotional state (Rosiek, Rosiek-Kryszewska, Leksowski, & Leksowski, 2016; Ruzhenkova, Ruzhenkov, Zhernakova, Gomelyak, 2017). Reduced appetite, anxious thoughts, trembling, accelerated pulse, and sleepless nights are characteristic manifestations of examination stress. There is now strong evidence that exam stress negatively affects not only the emotional state, but also the nervous, immune, cardiovascular system of students, that is, the body as a whole (Reisbig, Danielson, Wu, Hafen, Krienert, Girard, & Garlock, 2012). The results of the study clearly showed an increase in the level of examination stress of modern Ukrainian students over the last decade, which is a worrying fact, since it is the exam is the strongest factor that provokes the appearance of stress during their studies.

The level of exam stress of female students is significantly higher than that of male students, which is completely consistent with the above studies of the educational stress of modern students. It was also found that the level of examination stress of university students is significantly higher than that of students of vocational schools. It should be emphasized that one of the most

dangerous consequences of exam stress is the use of alcohol and drugs by students, intense smoking to "relieve stress" and improve mood, as evidenced by the results of recent studies by other authors (Semikin, 2013; Melaku, Mossie, & Negash, 2015).

The results of empirical research have shown that psychological stress in university and vocational school students, as a rule, arises within the framework of educational activities.

Over the past decade, the importance of the problems related to educational activities and the everyday life of students has increased. At the same time, significantly less important became the problems of personal life, conflicts in the group, and living away from their parents.

The main stressful situations for most of the modern students are related to educational activities; the least stressful are related to conflicts in the group and cohabitation with other students. The overall stress picture of the university students includes significantly more stressful situations than that of the vocational school students. The importance of most of the problems for female students is statistically higher than for male students.

Common for modern students is the fact that the most pronounced manifestations of educational stress are behavioral; the least pronounced manifestations are physiological, which may indicate students' good health - stress appears mainly on the psychological level. Manifestations of stress reactions of university students caused by their living outside their parental homes are significantly more pronounced than those of vocational school students; the manifestations of stress of female students are more pronounced than those of male students.

The exam stress level for modern students is significantly higher than that of a decade ago. Actually, examinations become the strongest factor that provokes stress among students during their education. The exam stress level for university students is significantly higher than that of vocational school students; the stress level of female students is higher than that of male students.

Statistically significant differences in methods for stress relief used by modern students were identified. Our study shows that gender and stress relief methods are related. Vocational school students use alcohol, drugs, and cigarettes more than twice as often as university students, which is alarming and indicates the need for them to learn effective techniques for relieving stress.

Thus, the results of research indicate the need for targeted psychological work on the formation of stress resistance of students and will be useful for applied psychologists of universities and vocational schools in their work with students.

Внесок авторів: Галина Дубчак – концептуалізація, методологія, програмне забезпечення, формальний аналіз, написання (перегляд і редактування); Людмила Сердюк – концептуалізація, методологія, написання (перегляд і редактування); Тетяна Траверсе – концептуалізація, методологія, написання (перегляд і редактування).

References

Byra, S., Parchomiuk, M. (2008). *Osobowościowe i społeczne uwarunkowania radzenia sobie ze stresem przez studentów pierwszego roku*. Lublin: UMCS.

Carlson, N. R., & Heth, D. S. (2007). *Psychology the science of behaviour*. Pearson Education: New Jersey.

Derbis, R., & Baka, Ł. (2011). Znaczenie wsparcia społecznego i zaangażowania w pracę dla związku stresorów w pracy i wypalenia zawodowego. *Czasopismo Psychologiczne*, 17 (2), 277-287.

Heszen, I. (2013). *Psychologia stresu. Korzystne i niekorzystne skutki stresu życiowego*. PWN: Warszawa.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Le Blanc, P., de Jonge, J., & Schaufeli, W. (2007). Stres zawodowy a zdrowie pracowników. [w:] N. Chmiel (red.), *Psychologia pracy i organizacji*. Gdańsk: GWP.

Lee, M. & Larson, R. (2000). The Korean „Examination Hell”: Long hours of studying, distress and depression. *Journal Youth Adolesc*, 29, 249-271.

Litzcke, S. M., & Schuh, H. (2007). *Stres, mobbing i wypalenie zawodowe*. Gdańsk: GWP.

Łosiak, W. (2008). *Psychologia stresu*. Warszawa: WAiP.

Lou, W. & Chi, I. (2000). The stressors and psychological well-being of senior secondary school students. *Psychol. Sci. China*, 23, 156-159.

Maslach, C., & Leiter, M. (2011). *Prawda o wypaleniu zawodowym: Co robić ze stresem w organizacji*. Warszawa: PWN.

Melaku, L., Mossie, A., & Negash, A. (2015). Stress among Medical Students and Its Association with Substance Use and Academic Performance. *Journal of Biomedical Education*, Article ID 149509, <http://dx.doi.org/10.1155/2015/149509>

Moryś, J. & Jeżewska, M. (2006). Problematyka stresu. Historyczne, społeczne i medyczne aspekty problematyki stresu. [w:] Borys, B., & Majkowicz, M. (red.). *Psychologia w medycynie*. Gdańsk: GWP.

Ogińska-Bulik, N. (2006). *Stres zawodowy w zawodach usług społecznych. Źródła – konsekwencje – zapobieganie*. Warszawa: Difin.

Putwain, D. W. & Woods, K. A. Symes W (2010). Personal and situational predictors of test anxiety of students in post-compulsory education. *British Journal of Educational Psychology*, 80 (1), 137-160.

Putwain, D. W. (2009) Assessment and examination stress in Key Stage. *British Educational Research Journal*, 35(3), 391-411.

Qamar, K., Khan, N. S., & Bashir Kiani M. R. (2015). Factors associated with stress among medical students. *Journal of the Pakistan Medical Association*, 65 (7), 753-755.

Reisbig, A. M., Danielson, J. A., Wu, T. F., Hafen, M. Jr., Krienert, A., Girard, D., & Garlock, J. (2012). A study of depression and anxiety, general health, and academic performance in three cohorts of veterinary medical students across the first three semesters of veterinary school. *Journal of veterinary medical education*, 39 (4), 341-358, <https://doi.org/10.3138/jvme.0712-065R>.

Rosiek, A., Rosiek-Kryszewska, A., Leksowski, Ł., & Leksowski, K. (2016). Chronic stress and suicidal thinking among medical students. *International journal of environmental research and public health*, 13 (2), <https://doi.org/10.3390/ijerph13020212>.

Ruzhenkova, V. V., Ruzhenkov, V. A., Zhernakova, N. I., & Gomelyak, J. N. (2017). Sleep disorders in the 1st-year medical students as the result of the educational stress: Clinical and prophylactic aspects. *Journal of Pharmacy Research*, 11 (12), 1584-1588.

Selye, H. (1960). *Stres życia*. Warszawa: PWN.

Simmons, B. L., & Nelson, D. L. (2007). Eustress at Work: Extending the Holistic Stress Model. [in:] Nelson, D. L., & Cooper, C. L. (eds). *Positive organizational behavior: Accentuating the positive at work*. SAGE: London.

Vaez, M. (2004). *Health and quality of life during years at university: studies on their development and determinants*: PhD. Thesis. Stockholm: Karolinska Institutet.

Verma, S. & Gupta, J. (1990). Some aspects of high academic stress and symptoms. *Journal of Personality and Clinical Studies*, 6, 7-12.

Отримано редакцію журналу / Received: 18.10.25
 Прорецензовано / Revised: 15.11.25
 Схвалено до друку / Accepted: 17.11.25

Галина ДУБЧАК, д-р психол. наук
 ORCID: 0000-0002-4062-979X
 e-mail: halinadubczak@gmail.com
 Університет Кардинала Стефана Вишінського, Варшава, Польща

Людмила СЕРДЮК, д-р психол. наук, проф.
 ORCID ID: 0000-0001-8301-4034
 e-mail: lserdyuk15@gmail.com
 Інститут психології ім. Г. Костюка, Київ, Україна

Тетяна ТРАВЕРСЕ, д-р психол. наук, проф.
 ORCID: 0000-0002-9031-1173
 e-mail: traversay@ukr.net
 Київський національний університет імені Тараса Шевченка, Київ, Україна

НАВЧАЛЬНИЙ СТРЕС: ЯК З НИМ СПРАВЛЯЮТЬСЯ УКРАЇНСЬКІ СТУДЕНТИ

В ступ . Це дослідження мало на меті привернути увагу дослідників та фахівців до необхідності комплексного розгляду проблеми стресу в навчальній діяльності. Метою дослідження стало вивчення, який є рівень стресу у сучасних українських студентів і чи він змінився за останні 10 років? Що найчастіше є причиною навчальних стресів? Які є прояви стресів у сучасних студентів? Як студенти справляються зі стресовими ситуаціями в повсякденному житті? Чи є відмінності в особливостях навчальних стресів чоловіків та жінок, а також у студентів вищих та професійних училищ?

М е т о д . У дослідженії використовується методика дослідження навчального стресу, яка являє собою самоописову шкалу, що дозволяє визначити: основні причини академічного стресу; рівень академічного стресу; прояви стресу в навчальній діяльності; методи зняття стресу; рівень та основні ознаки екзаменаційного стресу. Аналіз було проведено на групі з 600 студентів (включаючи 316 студентів університетів, 284 студентів професійно-технічних училищ; 283 чоловіки з 317 жінок) віком 15-45 років.

Р е з у л ь т а т и . З'ясовано, що для більшості українських студентів основні стресогенні ситуації пов'язані з навчальною діяльністю; найменш стресові – з конфліктами у групі та проблемами спільногого проживання з іншими студентами. Рівень екзаменаційного стресу сучасних студентів є істотно вищим, ніж десятиліття тому; у студентів вузів є істотно вищим, ніж в учнів професійних училищ; у студентів жінок – вищим, ніж у студентів чоловіків. Спільними найбільш вираженими проявами навчальних стресів є поведінкові; найменш вираженими – фізіологічні. З'ясовано, що статті вибір прийому зняття стресу між собою пов'язані.

В и с о в к и . Зроблено висновок про необхідність спеціально організованої цілеспрямованої психологічної роботи зі студентами з високим рівнем прояву навчального та екзаменаційного стресів.

К л ю ч о в і с л о в а : студенти, навчальний стрес, екзаменаційний стрес, стресові фактори, стресові стани.

Автори заявляють про відсутність конфлікту інтересів. Спонсори не брали участі в розробленні дослідження; у зборі, аналізі чи інтерпретації даних; у написанні рукопису; в рішенні про публікацію результатів.

The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.