

PSYCHOLOGICAL CHARACTERISTICS OF EDUCATIONAL STRESS OF MODERN STUDENTS

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Abstract

The article presents the results of the empirical research of psychological characteristics of stress reactions that occur during educational activities of modern Ukrainian students. 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. Common and distinctive characteristics as for importance, levels, forms, dynamics and stress management techniques are determined for students of universities and vocational secondary schools. The conclusions are made about the need of organization of specifically targeted psychological work with students having high manifestations of educational and examination stress.

Keywords: students, stress, examination stress, stress factors, stress states.

Introduction

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. The research results clearly indicate that educational stress causes emotional reactions that mostly negatively affect the person, his/her attention, thinking, memory, and, in general, influence the success of students' educational activities (Shcherbatikh, 2006; Byra & Parchomiuk, 2008). Difficulties on the way to educational success, in turn, cause discomfort that increases further overall stress.

The psychological literature has a lot of studies describing psychological aspects of stress (Selye, 1960; Lazarus & Folkman, 1984; Łosiak, 2008; Heszen, 2013, 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 as triple – as reaction, stimulus and transaction (Moryś & Jeżewska, 2006). Stress occurs at the biological and psychological level in humans (Łosiak, 2008).

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 (Simmons & Nelson, 2007; Le Blanc, de Jonge, & Schaufeli, 2007; Maslach & Leiter, 2011). Stress reactions of the human body as response to social impact are attracting increased attention by such scientists as Derbis & Baka, 2011; Litzcke & Schuh, 2007; Ogińska-Bulik, 2006, and others.

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 (Shcherbatykh, 2006; Byra & Parchomiuk, 2008; Melaku, Mossie, & Negash, 2015; Qamar, Khan, & Bashir Kiani, 2015; Rosiek, Rosiek-Kryszewska, Leksowski, & Leksowski, 2016, etc.).

It should be noted that today there is no comprehensive definition of educational stress, but it is possible to distinguish the characteristics 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/her adaptive resources.

Various 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; Semikin, 2013). In fact, most studies focus on the educational stress of first-year students (Reisbig, Danielson, Wu, Hafen, Krienert, Girard, & Garlock, 2012; Ruzhenkova, Ruzhenkov, Zhernakova, & Gomelyak, 2017). A study conducted by Holmogorov and Krasnova (2011) identified the causes of stress disorders in third year students associated with the identity crisis at this age.

Factors that contribute to the development of stress are the lack of time, conflicts with classmates, loved ones and teachers, poor performance, the need to combine work and study, too much academic load, lack of sleep (Shcherbatykh, 2006).

One of the varieties of learning stress is examination stress. The disadvantages of the examination preparation period include: intense mental activity, sleep disturbances, emotional experiences related to the possible change in students' social status (Shcherbatykh, 2006; Sudakov, 2012).

A number of studies have found that during the examination session students have experienced violations of the autonomic regulation of the cardiovascular system, increased level of muscular and psycho-emotional tension (Rosiek, Rosiek-Kryszewska, Leksowski, & Leksowski, 2016; Ruzhenkova, Ruzhenkov, Zhernakova, & Gomelyak, 2017).

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 (Istomina, 2009). 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/her 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 (Istomina, 2009).

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, in particular 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.

This study, aimed at studying the psychological aspects of educational stress of modern students, aims to draw the attention of researchers to this problem.

The research aim was to obtain information about the features of the life of students under the influence of educational stress, namely, what is the level and manifestations of stress

in modern students of higher and secondary education, what causes it and how students cope with stressful situations in everyday life.

The object of the research: the process of experiencing stress among modern Ukrainian students.

The subject of the research: psychological features of students' educational stress.

Participants of the research

The empirical study involved 600 students of vocational schools and universities of Chernivtsi (Ukraine), including 316 university students and 284 students of vocational schools, 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 ($20,14\pm 3,69$) is significantly higher than that of vocational schools ($17,36\pm 1,14$) ($p<0,001$). The surveyed sample included 283 men and 317 women enrolled in the following professions: medical assistant, nurse, salesperson, waiter, bartender, hairdresser, history teacher, lawyer, social educator, psychologist, primary school teacher, preschool teacher, philologist, doctor.

The participants of the research were informed that the purpose of the study was to investigate the psychological characteristics of educational stress and asked to give honest answers. Consent to the study was obtained verbally. The research participants 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.

Chi-square test confirmed homogeneity of student groups by gender, specialty and types of educational organization ($p\geq 0,05$; ni).

Methods of the research

The study uses the technique of educational stress testing proposed by Shcherbatykh (Shcherbatykh, 2006). This technique is a self-describing scale that allows you to identify: the contribution of individual problems to the overall picture of educational stress; stress level in the last three months of study; manifestations of stress in learning activities; the methods used by students to relieve stress; severity of examination stress during an examination period.

The participants were asked to read carefully the entire list of learning problems and evaluate: the contribution of each problem to the overall picture of stress (on a 10-point scale); how the level of constant stress has changed over the last three months of study (on a 5-point scale); what are the manifestations of stress related to learning (on a 10-point scale); what kind of stress relief techniques they practice (select from the suggested list); how anxious they are before the examinations (score on a 10 point scale) and what signs of examination stress they have noticed in themselves (select from the list below). In the absence of the required answer, students had the opportunity to write their own answer.

The results obtained were compared with those of students in 1-3 years of humanities disciplines, obtained by the author of the method (Shcherbatykh, 2006, pp. 209).

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

Results and Discussion

The comparative analysis of the significance of a certain problem in an overall picture of modern students' stress

The study, presented in Table 1, indicates that the significance of a certain problem in the overall picture of modern students' stress is much more higher than that shown in Shcherbatykh's research made more than a decade ago (Shcherbatykh, 2006).

Table 1. Analysis of the significance of a certain problem in the overall picture of modern students' stress

Problem	Ma	M	SD
Strict teachers	4,8	5,37***	2,38
Heavy academic load	3,4	6,77***	2,43
Lack of textbooks	4,1	5,18***	2,90
Obscure, boring textbooks	5,0	5,04	2,78
Living away from parents	5,0	4,59*	3,24
Inability to allocate limited finances properly	3,4	4,00***	2,63
Inability to organize daily routine	3,6	3,97***	2,56
Irregular meals	3,6	4,78***	2,89
Problems of cohabitation with other students	2,7	3,01	2,69
Conflicts in the group	3,1	2,83**	2,36
Excessively serious attitude to learning	3,8	4,00	2,65
Unwillingness to learn or disappointment in a chosen profession	2,5	3,78***	2,73
Awkwardness, shyness	3,3	4,07***	2,73
Fear of the future	3,6	4,84***	2,96
Problems in personal life	5,3	3,81***	3,06

Notes: Ma – the average value, obtained by Shcherbatykh, M – the average value, SD – the standard deviation, * p<0,05; ** p<0,01; *** p<0,01.

Student's t-test shows that the importance of problems related to students' educational activities (heavy academic load, lack of textbooks, strict teachers, unwillingness to learn or disappointment in a chosen profession), psychological (fear of the future) and problems related to every-day 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 parents are substantially less important.

Therefore, as for today's students, the most stressful factors are related to educational activities, and the least stressful one is conflicts in the group, which may currently be absent. The significance of the problems associated with excessively serious attitude to learning and incomprehensible, boring textbooks (p>0,05) has not changed. Consequently, the problems defined by Shcherbatykh (2006) more than a decade ago remain a source of stress of today's students, but their severity has become significantly higher.

In addition to the analysis, there is the comparison of the students in accordance with their gender and type of educational institution (see Tables 2, 3).

Table 2. Analysis of the significance of the problem in the overall stress picture for students by their gender

Problem	Women		Men	
	M	SD	M	SD
Strict teachers	5,32	2,30	5,42	2,46
Heavy academic load	6,74	2,37	6,82	2,49
Lack of textbooks	5,35	2,85	4,99	2,95
Obscure, boring textbooks	5,04	2,89	5,03	2,70
Living away from parents	4,93	2,70	3,93**	2,72
Inability to allocate limited finances properly	4,21	2,62	3,77*	2,62
Inability to organize daily routine	4,43	2,52	3,45***	2,52
Irregular meals	5,37	2,84	4,12***	2,81
Problems of cohabitation with other students	2,92	2,60	3,12	2,79
Conflicts in the group	3,29	2,56	2,33***	2,00
Excessively serious attitude to learning	4,26	2,60	3,71*	2,68
Unwillingness to learn or disappointment in a chosen profession	4,00	2,82	3,54*	2,61
Awkwardness, shyness	4,39	2,95	3,71**	2,40
Fear of the future	5,44	3,05	4,17***	2,71
Problems in personal life	4,25	3,14	3,32***	2,91

Notes: M – the average value, SD – the standard deviation, * $p < 0,05$; ** $p < 0,01$; *** $p < 0,01$.

The data in Table 2 show that most stressful situations for males and females are the situations related to educational activities. In addition, the problems especially stressful for females are fear of the future and irregular meals, whereas these problems for males 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 females than that for males ($p < 0,001$).

However, the differences in the importance of the problems associated directly with educational situations are not statistically significant ($p > 0,05$). This means that they are stressful for both males and females equally and they are the source of their stress.

The study, presented in Table 3, indicates that the common and most stressful situations for students of university and vocational secondary school are situations related to educational activities, namely heavy academic load and strict teachers. In addition, the particularly severe situations for university students are the 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 trainings, while vocational schools do to practical aspects of vocations.

Table 3. Analysis of the significance of the problem in the overall stress picture for students by the types of their educational institutions

Problem	University students		Vocational school students	
	M	SD	M	SD
Strict teachers	5,56	2,26	5,16*	2,49
Heavy academic load	6,82	2,04	6,73	2,79
Lack of textbooks	5,67	2,93	4,63***	2,77
Obscure, boring textbooks	5,29	2,77	4,75*	2,78
Living away from parents	5,06	3,24	3,59***	3,01
Inability to allocate limited finances properly	4,07	2,58	3,93	3,01
Inability to organize daily routine	4,49	2,52	3,39***	2,49
Irregular meals	5,05	2,78	4,48*	2,99
Problems of cohabitation with other students	2,97	2,45	3,06	2,96
Conflicts in the group	2,59	2,20	3,10*	2,52
Excessively serious attitude to learning	4,34	2,70	3,62***	2,54
Unwillingness to learn or disappointment in a chosen profession	3,90	2,80	3,65	2,64
Awkwardness, shyness	4,18	2,76	3,95	2,69
Fear of the future	5,00	2,78	4,67	3,15
Problems in personal life	4,17	2,95	3,41**	3,14

Note: see professions in Table 2.

These data show that among the most significant problems of university students there is also life away from their parents, the importance of which is statistically higher than that for students of vocational schools ($p < 0,001$). It should be noted that in order to study chosen specialties in universities, the most students had to leave their native towns, while the school that is the closest to home is often chosen for training at vocational school. Student's t-test performed reveals significant differences in the importance of most of the problems for the modern students, the university students are more distressed because of these problems in comparison with vocational school students ($p < 0,001$). However, there are no statistically significant differences for the problems associated with heavy academic load, inability to allocate limited finances properly, cohabitation with other students, unwillingness to learn or disappointment in a chosen profession, shyness, fear of the future ($p > 0,05$). We can assume that these problems are related to a greater extent to the peculiarities of age and are equally manifested by students of universities and vocational secondary schools. Thus, the above data of the overall stress picture show that university students live in much more stressful situations than students of vocational schools.

The comparative analysis of the dynamics of educational stress for modern students

The comparative analysis of students' stress dynamics over the last three months of the academic year shows interesting results, in our opinion. The survey results listed in Tables 4-5 indicate the variability of stress load for students during the school year.

Table 4. Analysis of permanent stress over the last three months of the academic year (%)

Stress level	Significantly decreased	Decreased	Not changed	Slightly increased	Significantly increased
Total sample	16,4	10,6	39,1	26,4	7,4
University students	19	7,8	33,0	30,3	9,9
Vocational school students	13,2	14,0	46,5	21,8	4,5
Women	17,5	13,2	36,4	20,9	11,9
Men	14,9	7,2	42,6	33,6	1,7

The data show that stress levels of about 39% of students remained the same during the last three months of the academic year, stress of 27% decreased, but stress for 34% of the students aggravated, witnessing intense mental activity of students. Student's t-test reveals that the found changes are statistically significant ($p < 0,001$). It should be noted that students with high levels of educational stress can be attributed to persons in need of psychological assistance.

Table 5. Analysis of permanent stress over the last three months of the academic year

Total sample		University students		Vocational school students		Women		Men	
M	SD	M	SD	M	SD	M	SD	M	SD
2,98	1,15	3,04	1,24	2,96	0,711	2,96	1,23	3,00	1,03

The fact is noteworthy that the comparative analysis of students' stress loads by their gender and types of educational institutions does not show statistically significant differences ($p > 0,05$). We can assume that these changes are more related to age characteristics and equally developed in males and females and students of university and vocational secondary schools.

The comparative 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 educational activities of the students (see Table 6).

Table 6. Analysis of the manifestations of stress related to students' educational activities

Stress manifestations	Ma	M	SD
Feeling of helplessness	4,0	4,31**	2,67
Inability to get rid of extraneous thoughts	4,7	4,21***	2,62
Poor concentration	3,8	4,28***	2,49
Irritability, resentment	3,5	3,99***	2,64
Bad mood, depression	4,4	4,28	2,82
Fear, anxiety	3,8	3,66	2,7
Loss of confidence, low self-esteem	2,9	3,37***	2,56
Haste, feeling of constant lack of time	4,5	5,13***	3,01
Poor sleep	3,9	5,38***	3,31
Breach of social contacts	2,6	3,37***	2,34
Heart palpitations, heart pain	2,6	3,00***	2,74
Gasp	2,1	2,38**	2,38

Continued Table 6

Problems with the gastrointestinal tract	3,2	2,52***	2,46
Tension or muscle tremors	2,8	2,26***	1,95
Headaches	4,9	3,71***	2,73
Low efficiency, permanent fatigue	5,0	3,93***	2,85

Notes: Ma – the average value, obtained by Shcherbatykh, M – the average value, SD – the standard deviation, ** $p < 0,01$; *** $p < 0,01$.

Manifestations of stress related to educational activities presented in Shcherbatykh's (2006) techniques can be attributed to cognitive, behavioural, emotional and physiological ones. The data in Table 6 show 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. This can indicate students' good health; stress is manifested mainly at the psychological level.

The comparative analysis of our results and the survey of Shcherbatykh (2006) is also interesting. Student's t-test shows that most of the manifestations of stress related to students' educational activities significantly increased over time, except some physiological manifestations that decreased. There are no changes over time for emotional manifestations such as low mood, depression, fear, anxiety ($p > 0,05$).

The comparative analysis of our results by gender shows that the most common manifestations of educational stress of females are poor sleep and bad mood, headaches, feeling helplessness, while males complain mostly of poor sleep (see Table 7).

Table 7. Analysis of stress manifestations by students' gender

Stress manifestations	Women		Men	
	M	SD	M	SD
Feeling of helplessness	4,54	2,89	4,06*	2,37
Inability to get rid of extraneous thoughts	4,31	2,62	4,11	2,62
Poor concentration	4,40	2,53	4,13	2,45
Irritability, resentment	4,46	2,91	3,46***	2,19
Bad mood, depression	4,64	2,92	3,88***	2,66
Fear, anxiety	4,22	2,87	3,04***	2,34
Loss of confidence, low self-esteem	3,69	2,58	3,01***	2,49
Haste, feeling of constant lack of time	5,32	2,83	4,91	3,18
Poor sleep	5,79	3,24	4,91***	3,32
Breach of social contacts	3,56	2,51	3,16*	2,12
Heart palpitations, heart pain	3,66	3,17	2,27***	1,92
Gasp	2,78	2,71	1,94***	1,86
Problems with the gastrointestinal tract	2,92	2,68	2,07***	2,11
Tension or muscle tremors	2,55	2,17	1,95***	1,61
Headaches	4,65	2,89	2,67***	2,09
Low efficiency, permanent fatigue	4,34	3,03	3,47***	2,57

Note: see professions in Table 6.

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

The data in Table 8 show that the common educational stress manifestations for students of university and vocational secondary schools are behavioural ones: rush, feeling of constant lack of time and poor sleep; the least severe manifestations are physiological: gasp, problems with the gastrointestinal tract, tension or muscle tremors.

Table 8. Analysis of stress manifestations by students' educational institutions

Stress manifestations	University students		Vocational school students	
	M	SD	M	SD
Feeling of helplessness	4,33	2,66	4,30	2,68
Inability to get rid of extraneous thoughts	4,32	2,50	4,10	2,75
Poor concentration	4,29	2,38	4,26	2,62
Irritability, resentment	4,12	2,60	3,85	2,69
Bad mood, depression	4,41	2,74	4,14	2,92
Fear, anxiety	3,85	2,55	3,45	2,84
Loss of confidence, low self-esteem	3,78	2,50	2,91***	2,55
Haste, feeling of constant lack of time	5,49	2,71	4,72**	3,26
Poor sleep	5,29	3,14	5,48	3,48
Breach of social contacts	3,24	2,26	3,52	2,43
Heart palpitations, heart pain	2,92	2,58	3,10	2,91
Gasp	2,49	2,05	2,26	2,02
Problems with the gastrointestinal tract	2,72	2,49	2,29*	2,04
Tension or muscle tremors	2,36	2,05	2,15	1,83
Headaches	3,84	2,67	3,57	2,78
Low efficiency, permanent fatigue	3,98	2,78	3,88	2,94

Notes: M – the average value, SD – the standard deviation, * $p < 0,05$; ** $p < 0,01$; *** $p < 0,01$.

The identified differences are not statistically significant, except such as 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 ($p < 0,001$).

These data are fully consistent with the preliminary findings; however, the overall stress picture of university students shows much more stressful situations than that of vocational school students, which is caused, mainly, by living outside the parents' home.

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

The study of methods used by the modern students to relieve stress is an interesting aspect of our study.

Table 9. Analysis of the main methods of stress relief used by the modern students (%)

Method	Total sample		Men		Women	
	do not use	use	do not use	use	do not use	use
Alcohol	85	15	78,8	21,2	90,05	9,5***
Cigarettes	83,8	16,2	76	24	90,9	9,1***
Drugs	98,2	1,8	97,2	2,8	99,1	0,9
TV	63,5	36,5	52,7	47,5	73,2	26,8***
Delicious food	51,3	48,7	41,3	58,7	60,3	39,7***
Break in learning	62,3	37,7	59,7	40,3	64,7	35,3***
Sleep	26,8	73,2	19,4	80,6	33,4	66,6
Socialising with friends	19,8	80,2	21,2	78,8	18,6	81,4
Parents' support and advice	52,3	47,7	59,4	40,6	46,1	53,9***
Sex	66,8	33,2	45,9	54,1	85,5	14,5***
Walking	44,2	55,8	51,2	48,8	37,9	62,1***
Hobby	64,5	35,5	54,8	45,2	73,2	26,8***
Physical activities	55,5	44,5	36,0	64	72,9	27,1***

Notes: *** $p < 0,01$.

The data of the frequency analysis presented in Table 9 show that socializing with friends or a loved one and sleep are often used by about 80% of students to relieve stress. About 50% of students use such tools as fresh air, delicious food, support or advice of 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. These people need psychological assistance of professionals to acquire effective methods of de-stressing.

The comparison analysis of the survey results by gender shows that there are statistically significant differences of the using of different de-stressing methods by males and females ($p < 0,001$). To relieve stress load, females often use sleep, socialising with friends or a loved one, walking outdoors, parents' advice, whereas males, besides sleeping and socializing with friends, use physical activities, delicious food and sex. Students most rarely use drugs, cigarettes and alcohol, while males use these methods more than twice as often as females. Quite rarely, compared to males, females use sex to relieve stress.

Based on chi-square test, we can argue that gender and chosen de-stressors are correlates, except such methods as sleep, socializing with friends or a loved one and drugs.

The comparative analysis of the survey results by types of educational institution shows that there are statistically significant differences in the using of different methods of stress relief by the modern students, namely, the vocational school students often use walking, hobbies, watching television, smoking cigarettes and drugs, while the university students more often seek advice from their parents ($p < 0,001$).

Table 10. Analysis of the methods to relieve stress used by students depending of their educational institution (%)

Method	University students		Vocational school students	
	do not use	use	do not use	use
Alcohol	83,5	16,5	86,6	13,4
Cigarettes	88,8	11,7	78,9**	21,1**
Drugs	100	0	96,1	3,9***
TV	71,5	28,5	54,6***	45,4***
Delicious food	53,2	46,8	49,3	50,7
Break in learning	58,9	41,1	66,2	33,8
Sleep	25,6	74,4	28,2	71,8
Socialising with friends	21,5	78,5	18	82
Parents' support and advice	48,4	51,6	56,7*	43,3*
Sex	70,3	29,7	63,0	37,0
Walking	48,1	51,9	39,8*	60,2*
Hobby	71,8	28,2	56,3***	43,7***
Physical activities	52,2	47,8	59,2	40,8

Vocational school students use alcohol, drugs and cigarettes as likely 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' examination 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 11 indicates that the level of students' examination stress equals to 7,25 points on a 10-point scale, which is alarming, as examinations become the strongest factor that provokes the occurrence of stress during educational years.

Table 11. Analysis of the examination stress level for today's students

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

Notes: Ma – the average value, obtained by Shcherbatykh, M – the average value, SD – the standard deviation, ** p<0,01; *** p<0,01.

This figure is significantly higher than that in the study of Shcherbatykh (p<0,05), consequently, we can argue the growth of students' examination stress over the past decade.

The fact is noteworthy that the examination stress level for females is significantly higher (M=8,33±2,07) than that for males (M=6,11±2,93). We also found that the level of examination stress of university students was significantly higher (M=7,63±2,17) than that of vocational school students (M=6,89±3,21). These data are fully consistent with the aforementioned studies of the educational stress of modern students.

An interesting analysis was done about the signs of students' examination stress. The data of the frequency analysis presented in Table 12 show that students most often have such a sign indicating the examination stress: palpitation (73%); headache or other pains (42,2%) are also manifested quite often. Such examination stress signs as gasp, dry mouth and stiffness, trembling muscles are manifested much less often (24-32% of students).

Table 12. Analysis of examination stress signs in students (%)

Examination stress signs	Total sample		Men		Women	
	Absent	Present	Absent	Present	Absent	Present
Heart palpitations	27***	73***	38,2***	61,8***	17***	83***
Dry mouth	70,3	29,7	67,8	32,2	72,6	27,4
Gasp	75,8	24,2	77,0	23,0	74,8	25,2
Stiffness, muscle tremors	68*	32*	73,1*	26,9*	63,4*	36,6*
Headache or other pains	57,8***	2,2***	66,3***	33,7***	50,2***	49,8***

Notes: * $p < 0.05$; *** $p < 0.01$.

The comparative analysis by gender shows that the most common signs of examination stress for females are heart palpitations and headache or other pains. Almost two-thirds of males complain with heart palpitations; other signs of examination stress are not significant for males. Student's t-test shows significant differences in examination stress signs, which are more pronounced in females, except dry mouth and heart palpitations that occur with equal frequency in males and females.

Table 13. Analysis of examination stress signs in students from different educational institutions (%)

Examination stress signs	University students		Vocational school students	
	Absent	Present	Absent	Present
Heart palpitations	27,2	72,8	26,8	73,2
Dry mouth	70,3	29,7	70,4	29,6
Gasp	78,2	21,8	73,2	26,8
Stiffness, muscle tremors	70,6	29,4	65,1	34,9
Headache or other pains	57,8	42,2	57,7	42,3

The data in Table 13 show that most often examination stress signs in most students at universities and vocational secondary schools are heart palpitations and nearly every other student has a headache or other pains. Almost a third of the students complain with stiffness, muscle tremor and dry mouth; other signs of examination stress were found in a small part of the students. However, the found differences are statistically not significant ($p > 0,05$).

The empirical data obtained by the study conducted with the participation of modern Ukrainian students fully confirm the opinion of scientists that the examination session is a common source of traumatic actions for students (Sudakov, 2012; Shcherbatykh, 2006). Intense mental workload, work 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 the examination stress. Besides, tests and examinations can serve as factors that affect students' mood, well-being, psyche, and psycho-emotional state (Krasnova & Holmogorov, 2011; Rosiek, Rosiek-

Kryszewska, Leksowski, & Leksowski, 2016; Ruzhenkova, Ruzhenkov, Zhernakova, Gely, & Ghern, 2017). Reduced appetite, anxious thoughts, trembling, accelerated pulse, sleepless nights are characteristic manifestations of examination stress. There is now a strong evidence that examination 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).

It should be emphasized that one of the most dangerous consequences of educational 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).

Conclusions

The results of the empirical research have shown that psychological stress in university and vocational school students, as a rule, arises within the framework of educational activities and is a peculiar form of reflection of the difficult situation they are in.

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

The main stressful situations for most of the modern students are related to educational activities; the least stressful ones 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 females is statistically higher than for males.

The strongest educational stress signs and the common ones for most students are behavioural manifestations; the least apparent signs are physiological, which may indicate students’ good health, stress appears mainly on the psychological level. Manifestations of stress reactions by university students caused by their living outside their parents’ homes are significantly more pronounced than that of vocational school students; the manifestations of females are more pronounced than those of males.

The examination stress level for today’s students is significantly higher than that a decade ago. Actually, examinations become the strongest factor that provokes stress in students during education. The examination stress level for university students is significantly higher than that of vocational school students; the stress level of females is higher than that of males.

There is statistically significant difference in the using of different methods for stress relief by modern students. Our study shows that gender and stress relief methods are related. Vocational school students use alcohol, drugs and cigarettes as likely as university students, which is alarming and points to the need for acquisition of effective healthy methods of de-stressing by them.

Thus, the analysis results indicate the need for targeted psychological assistance to form stress tolerance of future professionals that will be the prospect of our further research in this field.

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PSYCHOLOGICAL CHARACTERISTICS OF EDUCATIONAL STRESS OF MODERN STUDENTS

Summary

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The results of the empirical research have shown that psychological stress in modern university and vocational school students, as a rule, arises within the framework of educational activities and is a peculiar form of reflection of the difficult situation they are in.

It has been found that over the past decade, the importance of the problems related to educational activities and daily living of students has increased. At the same time, the problems of personal life, conflicts in the group and living away from parents became significantly less important. The main stressful situations for most of the modern students are related to educational activities; the least stressful ones 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 females is statistically higher than for males.

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The examination stress level for today's students is significantly higher than that a decade ago. Actually, examinations become the strongest factor that provokes stress in students during education. The examination stress level for university students is significantly higher than that of vocational school students; the stress level of females is higher than that of males.

There is statistically significant difference in the using of different methods for stress relief by modern students. Our study shows that gender and stress relief methods are related. Vocational school students use alcohol, drugs and cigarettes as likely as university students, which is alarming and points to the need for acquisition of effective healthy methods of de-stressing by them.

Thus, the analysis results indicate the need for targeted psychological assistance to form stress tolerance of future professionals having professions that will be the prospect of our further research in this field.

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