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# FEATURES OF THE PROCESSES OF FORMATION OF INDICATORS OF EMOTIONAL BURNOUT OF STUDENTS IN THE DYNAMICS OF LEARNING IN MODERN INSTITUTIONS OF HIGHER MEDICAL EDUCATION

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**Ключові слова:** *студенти, заклади вищої медичної освіти, навчальний процес, емоційне вигорання, процеси формування*
**Ключевые слова:** *студенты, учреждения высшего медицинского образования, учебный процесс, эмоциональное выгорание, процессы формирования*

**Abstract. Features of the processes of formation of indicators of emotional burnout of students in the dynamics of learning in modern institutions of higher medical education. Serheta I. V., Mostovaya O. P., Panchuk O. Yu., Stoyan N. V.** *The purpose of the work is to establish features of the processes of formation of indicators of emotional burnout of students in the dynamics of studies in modern institutions of higher medical education. The research was conducted on the basis of National Pirogov Memorial Medical University, Vinnytsya, where 307 students of the 1st, 3d, and 6th courses were surveyed. In order to assess the level of development of characteristics of emotional burnout, Boyko's personal questionnaire was used. It was established that a high level of severity of the leading manifestations of emotional burnout among students which determines their pronounced emotional instability and a tendency to develop various disorders in terms of the characteristics of psychophysiological adaptation and that of mental sphere was observed among young women, and, first of all, among third-year and first-year ones. Considering the structural distribution of the studied indicators, it should be noted that in all comparison groups the leading components of emotional burnout were either at the formation stage (youths of the 1st and 3d courses and girls of the 1st and 6th courses) or were already formed (youths of the 6th course and girls of the 3rd course). During the analysis of the features of formation of the main phases of emotional burnout, it should be noted that the highest degree of their development during period of learning was inherent of the resistance phase, followed by indicators of individual manifestations of the exhaustion phase and, lastly, tension phase. In the structure of the characteristics of the phase of tension mostly pronounced both in young men and young women, it is necessary to consider indicators of anxiety, depression and experiences of traumatic circumstances, in the structure of the leading characteristics of the phase of resistance – indicators of inadequate selective emotional response and reduction of professionally-oriented educational duties, in the structure of the leading characteristics of the phase of exhaustion – indicators of the severity of psychosomatic and psychovegetative shifts, personal detachment and emotional deficit.*

**Реферат. Особенности процессов формирования показателей эмоционального выгорания студентов в динамике обучения в современных учреждениях высшего медицинского образования. Сергета И. В., Мостовая О. П., Панчук А. Е., Стоян Н. В.** *Цель работы – установить особенности формирования показателей эмоционального выгорания студентов в динамике обучения в учреждениях высшего медицинского образования. Исследования проводились на базе Винницкого национального медицинского университета им. Н. И. Пирогова, где под наблюдением находились 307 студентов, обучающихся на 1, 3 и 6 курсах. Для оценки уровня развития характеристик эмоционального выгорания использовался личностный опросник Бойко. Установлено, что высокий уровень выраженности ведущих проявлений эмоционального выгорания среди студентов, определяющий их выраженную эмоциональную неустойчивость и склонность к развитию различных нарушений со стороны характеристик психофизиологической адаптации и психической сферы, наблюдался среди девушек, и, в первую очередь, среди девушек-третьекурсниц и девушек-первокурсниц. Рассматривая особенности структурного распределения исследуемых показателей, необходимо отметить, что во всех группах сравнения ведущие компоненты эмоционального выгорания находились либо на стадии формирования (юноши, обучающиеся на 1 и 3 курсах, и девушки, обучающиеся на 1 и 6 курсах), либо были уже сформированы (юноши, обучающиеся на 6 курсе, и девушки, обучающиеся на 3 курсе). В ходе анализа особенностей формирования основных фаз развития эмоционального выгорания следует отметить, что наиболее высокая степень их выраженности на протяжении периода обучения была присуща для фазы резистентности, далее следовали показатели, свидетельствующие об отдельных проявлениях фазы истощения и, в последнюю очередь, фазы напряжения. В структуре характеристик фазы напряжения наиболее выраженными и у юношей, и у девушек необходимо признать показатели тревожности, депрессии и переживания психотравмирующих обстоятельств, в структуре ведущих характеристик фазы резистентности – показатели неадекватного избирательного эмоционального реагирования и редукции профессионально-ориентированных учебных обязанностей, в структуре ведущих характеристик фазы истощения – показатели степени выраженности психосоматических и психовегетативных изменений, личностной отстраненности и эмоционального дефицита.*

One of the key places in the structure of personality traits of young students mastering a certain specialty in a higher education institution, institution of higher medical education including (IHME), undoubtedly belongs to the indicators of the level of expression of emotional burnout (EB), which is an indisputable factor in the formation of psychological instability, high level of emotional instability of youths and girls acquiring a specialty, to the influence of social and professional living conditions, as well as the degree of its propensity to develop various disorders on the part of characteristics of psychophysiological adaptation and mental sphere due to the influence of traumatic factors, which are the similar situations proper [4, 5, 6, 7, 8].

EB is a very specific mechanism of psychological protection based on the complete or partial exclusion of emotions produced by the individual in response to certain traumatic influences and, therefore, a certain emotionally significant functional

stereotype of daily educational or professional activities which, on the one hand, gives a person the opportunity to dose and economically spend his/her own energy resources and on the other hand – a significant increase in indifference to his/her duties, negativism towards others (peers, teachers, employees, etc.), feeling of own educational (professional) inability and dissatisfaction with the results of the work performed, deterioration of quality of life, etc. [5, 6, 10, 12]. EB is one of the most common reasons for the development of various phenomena of maladaptation and, as a consequence, a prerequisite for a significant reduction in the functional readiness of a person to effectively perform his/her educational or professional duties [2, 3, 8, 9, 11].

The purpose of the work is to establish the peculiarities of the formation of indicators of emotional burnout of students in the dynamics of education in institutions of higher medical studies.

**MATERIALS AND METHODS OF RESEARCH**

Research aimed at determining the peculiarities of the processes of formation of indicators of EB of students in the dynamics of studies in IHME was conducted at National Pirogov Memorial Medical University,Vinnytsya. Under the supervision there were 307 students including 150 youths and 157 girls of the 1st (50 youths and 56 girls), 3d (50 youths and 51 girls) and 6th course (50 youths and 50 girls), respectively.

In order to assess the level of development of the leading characteristics of EB of students during the research, Boyko's personal questionnaire was used, according to the leading provisions of which 12 of its main symptoms were determined, which form 3 phases of EB development, namely: stress phase (symptoms of traumatic circumstances experience, self-dissatisfaction, feeling of being "driven into a cage", anxiety and depression), phase of resistance (symptoms of selective inadequate emotional response, emotional and moral disorientation, expanding the scope of saving emotions and reducing professional responsibilities), as well as the phase of exhaustion (symptoms of the level of expression of psychosomatic and psycho-vegetative changes, emotional deficit and emotional and personal detachment). For each of the EB symptoms 3 stages are distinguished – unformed symptom (up to 9 points), developing symptom (from 10 to 15 points), and formed symptom (over 16 points), and, therefore, each stage of EB development can be defined as unformed (up to 37 points for the set of symptoms that makes it up), being formed (from 37 to 60 points) and formed (more than 60 points) [1].

The analysis of the data obtained provided for the application of descriptive statistics procedures based on the use of the statistical analysis software package “Statistica 6.1 for Windows” (licensed X BXXR901E245722FA).

**RESULTS AND DISCUSSION**

Considering the results obtained, initially it should be noted that the total generalized indicator of the level of expression of EB was the highest among girls, students of the third, first course and youths-graduates. In general, its values in youths of the 1st course were 152.44±8.28 points, in girls of the 1st course – 167.08±6.44 points, in youths of the 3rd course – 152.96±8.48 points ($p_{1–3}>0.05$), in girls of the 3rd course – 168.37±7.32 points ($p_{1–3}>0.05$), in youths of the 6th course – 148.50±7.98 points ($p_{3–6}>0.05$; $p_{1–6}>0.05$), in girls of the 6th course – 145.86±7.92 points ($p_{1–3}<0.05$; $p_{1–6}<0.05$). Statistically significant differences were registered while comparing data inherent in girls-students of 3rd and 6th ($p_{3-6}<0.05$) and 1st and 6th course ($p_{1-6}<0.05$). No significant sex-related differences were observed ($p_{y-g}>0.05$) (Table).

Indicators that characterized the level of stress (the first phase of EB development) and consequently determined the appearance and further development of manifestations of exhaustion of own emotional resources were higher in girls. In particular, among youths the level of stress clearly depended on the year of study in IHME, making up 46.22±3.61 points in freshmen, 42.08±3.47 points in the third-year students ($p_{1–3}>0.05$), 40.68±3.55 points in graduates ($p_{3–6}>0.05$; $p_{1–6}>0.05$). The level of stress was the highest in the girls of the first course, amounting to 52.67±2.93 points, however, in the third-year students and girls-graduates its values were 52.07±3.41, respectively ($p_{1–3}>0.05$) and 40.38±3.14 points ($p_{3–6}<0.05$; $p_{1–6}<0.01$). Statistically significant differences were registered when comparing the data inherent in girls-students of the 3rd and 6th courses ($p_{3-6}<0.05$) and those of the 1st and 6th courses ($p_{1-6}<0.01$). Significant gender differences were peculiar only to youths and girls of the 3rd year of study ($p_{y-g}<0.05$).

In the process of studying peculiarities of the development of certain features that are characteristic of the stress phase of EB, it was found that the symptoms of traumatic circumstances experience should be defined as being formed. Thus, among youths the level of traumatic circumstances experience remained quite stable, making up 12.44±1.13 points in freshmen, 13.14±1.25 points ($p_{1–3}>0.05$) – in the third-year students, 12.04±1.20 points ($p_{3–6}>0.05$; $p_{1–6}>0.05$) – in graduates. At the same time, it should be noted that among the girls of

the 3rd course, the indicator under consideration was the highest, making up 16.70±1.19 points ($p_{1–3}>0.05$), while its values among girls of the 1st and 6th year made up 15.42±0.96 points ($p_{1–3}>0.05$) and 12.44±1.14 points, respectively ($p_{3–6}<0.05$; $p_{1–6}<0.05$).

The level of expression of the symptom of feeling of "driven into a cage" should be defined as unformed in youths of the third year of study (7.16±1.14 points ($p_{1-3}>0.05$) and graduates ($p_{3-6}>0.05$, $p_{1–6}>0.05$). Only in freshmen the values of its leading manifestations that make up 10.28±1.26 points, should be interpreted as a developing symptom. A similar trend was observed in girls – the level of expression of the feeling of "driven into a cage" should be recognized as a developing symptom only in first-year students (10.98±0.94 points). Herewith in the third-year girls-students and graduates the level of its expression should have been defined as unformed, making 9.25±1.26 points ($p_{1–3}<0.05$) and 8.02±0.99 points ($p_{3–6}>0.05$; $p_{1–6}<0.05$).

**Indicators of level of emotional burnout of students in dynamics of studies in institution of higher medical education, points**

| Indicators of emotional burnout | Year of study | Groups of students | | | | $p(t)_{ю–д}$ |
|---|---|---|---|---|---|---|
| | | youths | | girls | | |
| | | n | M±m | n | M±m | |
| Total generalized indicator of emotional burnout syndrome | 1 курс | 50 | 152.44±8.28 | 56 | 167,08±6,44 | >0.05 |
| | 3 курс | 50 | 152.96±8.48 | 51 | 168,37±7,32 | >0.05 |
| | 6 курс | 50 | 148.50±7.98 | 50 | 145,86±7,92 | >0.05 |
| | $p(t)_{1-3}$ | | >0,05 | | >0.05 | |
| | $p(t)_{3-6}$ | | >0,05 | | <0.05 | |
| | $p(t)_{1-6}$ | | >0,05 | | <0.05 | |
| Level of manifestation of stress phase | 1 курс | 50 | 46.22±3.61 | 56 | 52,67±2,93 | >0.05 |
| | 3 курс | 50 | 42.08±3.47 | 51 | 52,07±3,41 | <0.05 |
| | 6 курс | 50 | 40.68±3.55 | 50 | 40,38±3,14 | >0.05 |
| | $p(t)_{1-3}$ | | >0,05 | | >0.05 | |
| | $p(t)_{3-6}$ | | >0,05 | | <0.05 | |
| | $p(t)_{1-6}$ | | >0,05 | | <0.01 | |
| Level of manifestation of resistance phase | 1 курс | 50 | 56.90±2.55 | 56 | 57,01±2,05 | >0.05 |
| | 3 курс | 50 | 60.84±2.86 | 51 | 63,49±2,50 | >0.05 |
| | 6 курс | 50 | 58.00±2.50 | 50 | 56,34±2,80 | >0.05 |
| | $p(t)_{1-3}$ | | >0,05 | | <0.05 | |
| | $p(t)_{3-6}$ | | >0,05 | | >0.05 | |
| | $p(t)_{1-6}$ | | >0,05 | | >0.05 | |
| Level of manifestation of exhaustion phase | 1 курс | 50 | 49.32±3.16 | 56 | 57,32±2,62 | >0.05 |
| | 3 курс | 50 | 50.02±3.31 | 51 | 52,80±2,90 | >0.05 |
| | 6 курс | 50 | 47.72±3.26 | 50 | 49,14±3,19 | >0.05 |
| | $p(t)_{1-3}$ | | >0,05 | | >0.05 | |
| | $p(t)_{3-6}$ | | >0,05 | | >0.05 | |
| | $p(t)_{1-6}$ | | >0,05 | | <0.05 | |

Manifestations of anxiety and depression, which are also an important prerequisite for the formation of the stage of stress, were to be defined as a developing symptom among youths-freshmen – 14.12±1.29 points, but slightly lower level, namely: 11.92±1.24 points ($p_{1–3}>0.05$) and 11.30±1.33 points ($p_{3–6}>0.05$; $p_{1–6}>0.05$), was registered among third-year students and graduates. A rather interesting and unexpected trend was observed among girls: in graduates its indicators which amounted to 9.36±1.06 points ($p_{3–6}<0.001$; $p_{1–6}<0.001$) should be interpreted as a developing symptom, among first-year students its indicators, which amounted to 14.75±1.24 points, should also be defined as a developing symptom, after all, among third-year students its indicators which amounted to 16.17±1.37 points ($p_{1–3}>0.05$) should have been identified as a developing symptom.

Of the three main phases of EB, the highest level was that of manifestation of resistance, which corresponds to the second phase of the formation of EB syndrome and indicates the development of body's natural resistance to the effects of emotional loading which happens to be. The indicators that characterized the level of resistance were the highest among youths of the third course: 60.84±2.86 points ($p_{1–3}>0.05$), while their level among first-year students was 56.90±2.55 points, among graduates – 58.00±2.50 points ($p_{3–6}>0.05$; $p_{1–6}<0.05$). In girls, the highest level of development was observed in the indicators typical for third-year girls-students, which amounted to 63.49±2.50 points ($p_{1–3}<0.05$). At the same time, in girls-freshmen the values of resistance indicators were 57.01±2.05 points, in graduates – 56.34±2.80 points ($p_{3–6}>0.05$; $p_{1-6}<0.05$). Statistically significant differences were registered in the case of comparison of data typical for girls of the 1st and 3rd courses ($p_{1-3}<0.05$). No significant sex-related differences were observed ($p_{y-g}>0.05$).

Among the main manifestations that are part of the resistance phase, it should be noted inadequate selective emotional reaction in response to exposure of environmental factors and social living conditions, the values of which should be interpreted as a formed symptom in all groups of comparison, except for girls-freshmen. Thus, among youths the indicators of inadequate selective emotional response did not differ significantly and made up 16.72±1.04 points in freshmen, 17.96±1.01 points ($p_{1–3}>0.05$) in third-year students and 17.62±0.99 points ($p_{3–6}>0.05$; $p_{1–6}>0.05$) in graduates. At the same time, the lowest degree of expression of this symptom among girls was found in first-year students – 15.23±0.77 points. Significantly higher levels of its values were observed among third-year students and girls-graduates, accounting for 19.76±1.09 points ($p_{1–3}<0.01$) and 16.56±0.99 points, respectively ($p_{3–6}<0.05$; $p_{1–6}>0.05$).

Assessing the peculiarities of manifestations of emotional and moral disorientation, it was necessary to consider the fact that its level during most of the time of training in IHME among girls was higher as compared to youths. Thus, if among the former its values ranged from 10.80±0.91 points in youths of the 1st course to 11.88±0.89 points ($p_{1-3}>0.05$) in students of the 3rd course and up to 11.50±0.90 points ($p_{3–6}>0.05$; $p_{1–6}>0.05$) in students of the 6th course, then among the latter there were observed fluctuations in its values, respectively, from 12.57±0.63 points in girls of the 1st course up to 10.21±0.97 points ($p_{1–3}<0.05$) in the 3rd year students and up to 12.08±1.10 points ($p_{3–6}>0.05$; $p_{1–6}>0.05$) in the 6th year students.

Indicators of the level of reduction of professionally-oriented educational responsibilities were also at a level that should be interpreted as a developing symptom, but only among youths and girls of the 3rd year of study, it reached values that needed to be defined as a symptom that has developed. In general, its values were 16.34±0.98 points in youths-freshmen, 17.82±1.26 points (9.0%; $p_{1-3}>0.05$) – in third-year students and 16.52±1.08 points (1.1%; $p_{3–6}<0.05$; $p_{1–6}>0.05$) in graduates and 15.23±0.87 points in first-year girls-students, 19.64±0.87 points (28.9%; $p_{1-3}<0.001$) – in third-year students and 16.34±1.15 points (7.2%; $p_{3–6}>0.05$; $p_{1–6}>0.05$) in graduates.

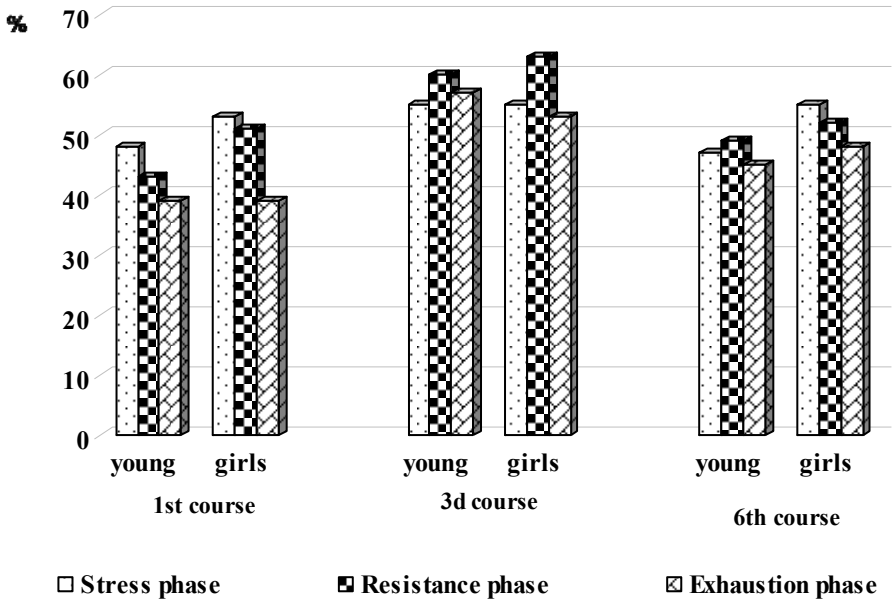
Most indicators of the third stage of EB, which is characterized by depletion of adaptation mechanisms, were characterized by values that should be interpreted as being in the stage that is being formed. Among youths the level of the studied indicators of exhaustion in the course of studying in IHME initially increased from 49.32±3.16 in freshmen to 50.02±3.31 points ($p_{1–3}>0.05$) in third-year students, further decreasing to 47.72±3.26 points ($p_{3–6}>0.05$; $p_{1–6}>0.05$) in graduates. At the same time, among girls it was slightly higher, and there were trends of other content - the level of expression of the studied indicators decreased during training in the educational institution from 57.32±2.62 points in freshmen to 52.80±2.90 points ($p_{1–3}>0.05$) in third-year students and up to 49.14±3.19 points ($p_{3–6}>0.05$; $p_{1–6}<0.05$) in girls-graduates. Statistically significant differences were registered in the case of comparison of data inherent in girls-students of 1st and 6th course ($p_{1–6}<0.05$). No significant sex-related differences were observed ($p_{y-g}>0.05$).

Among the symptoms that are an integral part of the stage of exhaustion, the level of expression of psychosomatic and psycho-vegetative changes was the lowest, it was decreasing during studies in IHME – from 11.38±1.15 points in youths-freshmen up to 9.86±1.23 points ($p_{1-3}>0.05$) in third-year students and up to 9.46±1.11 points ($p_{3-6}>0.05$; $p_{1-6}>0.05$) in graduates and from 15.91±1.01 points in girls of the first course to 12.60±1.17 points ($p_{1-3}<0.05$) in the third-year students and up to 11.84±1.24 points ($p_{3-6}>0.05$; $p_{1-6}>0.05$) in girls-graduates.

Indicators of emotional deficit in all groups of comparison were to be defined as a developing symptom, and, in contrast to the previous symptom, among youths its level during training period in IHME increased from 12.44±0.84 points in youths-freshmen to 13.76±0.91 points ($p_{1-3}$1–3>0.05) in youths of the third course and slightly decreased to 13.52±1.16 points ($p_{3-6}>0.05$; $p_{1-6}>0.05$) in graduates, among girls – it increased from 12.66±0.64 points in freshmen to 14.47±1.19 points ($p_{1-3}>0.05$) in third-year students, further decreasing to 11.94±1.05 points ($p_{3-6}>0.05$; $p_{1-6}>0.05$) in girls-graduates.

The level of emotional detachment in all comparison groups was defined as a developing symptom. In youths the degree of expression of the studied indicators increased from 12.94±1.10 points among youths-freshmen to 13.58±0.83 points ($p_{1-3}>0.05$) among youths of the third course and decreased to 12.92±0.93 points ($p_{3-6}>0.05$; $p_{1-6}>0.05$) among graduates, in girls the level of the studied indicators, on the contrary, initially decreased from 12.57±0.71 points among girls-freshmen to 10.98±0.77 points ($p_{1-3}>0.05$) among girls of the third course, again growing to 12.42±0.89 points ($p_{3-6}>0.05$; $p_{1-6}>0.05$) among girls-graduates.

Generalized data on the structural features of the distribution of students of IHME in accordance with the degree of expression of the main phases of EB are shown in the figure.




**Structural peculiarities of distribution of students according to manifestation of the main phases of emotional burnout**

**CONCLUSIONS**

1. In the course of the research it was found that the highest generalized level of expression of the leading manifestations of emotional burnout among students of higher medical education institution determining their pronounced emotional instability and tendency to develop various disorders of psycho-physiological adaptation and mental sphere was observed among girls and, first of all, among third-year and first-year students.

2. Considering the peculiarities of the structural distribution of the studied indicators, it should be noted that in all comparison groups the leading components of emotional burnout are mostly either in the stage of formation (youths of the 1st and 3rd

courses and girls of the 1st and 6th courses) or have already been formed (youths of the 6th course and girls of the 3rd course).

3. In the structure of the leading characteristics of the stress phase as the most pronounced in both youths and girls there should be noted indicators of anxiety and depression and traumatic circumstances experience, in the structure of the leading characteristics of the resistance phase – indicators of inadequate selective emotional response and reduction of professional responsibilities, in the structure of the leading characteristics of the phase of exhaustion – indicators of the level of expression of psychosomatic and psycho-vegetative changes, personal detachment and emotional deficit.

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