

Anesthesia, essays and researches. 2017 Apr;11(2):321.
doi: <https://doi.org/10.4103/0259-1162.194537>

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Стаття надійшла до редакції
28.12.2021



UDC 616.89-008.44:159.944.4]-057.875-036-07

<https://doi.org/10.26641/2307-0404.2022.2.260257>

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CLINICAL-PSYCHOPATHOLOGICAL AND PSYCHOMETRIC FEATURES OF MALADAPTIVE DISORDERS WHICH ARE A CHARACTERISTIC OF STUDENTS WHO HAVE EXPERIENCED PSYCHO-EMOTIONAL STRESS

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Цитування: Медичні перспективи. 2022. Т. 27, № 2. С. 88-95

Cited: Medicni perspektivi. 2022;27(2):88-95

Key words: *students, internally displaced persons, psychometry, adaptation disorders, stress, relatives of combatants*

Ключові слова: *студенти, внутрішньо переміщені особи, психометрія, розлади адаптації, стрес, родичі учасників бойових дій*

Ключевые слова: *студенты, внутренне перемещенные лица, психометрия, расстройства адаптации, стресс, родственники участников боевых действий*

Abstract. *Clinical-psychopathological and psychometric features of maladaptive disorders which are a characteristic of students who have experienced psycho-emotional stress. Sharun A.I., Yuryeva L.M. The purpose of this study is to discover the most relevant psychopathological features of maladaptive disorders arising under the influence of psycho-emotional stress in the student community and associated with consequences of military conflict, and identify potential diagnostic and treatment-rehabilitation measures for improving effectiveness of their primary, secondary and tertiary prevention in future. The study was conducted in 4 stages on the basis of an adapted questionnaire*

and a set of psychometric methods, involving 249 adult students (over 18 years), including a group of respondents at greatest risk – and namely students who are internally displaced persons and students children of anti-terrorist operation participants. The studies have shown a decrease in psychological well-being, the predominance of leading psychopathological symptoms of anxiety, lack of interest in life, lack of motivation, loss of vital energy, feelings of hopelessness, suicidal thoughts, somatic symptoms in the form of disorders of the cardiovascular, gastrointestinal systems, higher medium severity levels of asthenic manifestations; worse than the general indicator of quality of life among the respondents of the main group. Inverse correlation between a high level of state anxiety ($r = -0.6$) and trait anxiety ($r = -0.45$) and a low level of mental well-being has been proved. The obtained results can be used to substantiate and continue transformation of the system of social and medical support in health care, in particular when developing measures aimed at preventing development of non-psychotic mental disorders among students in Ukraine, which will optimize human resources and further health improvement of student youths.

Реферат. Клініко-психопатологічні та психометричні особливості дезадаптивних розладів, які притаманні студентам, що перенесли психоемоційний стрес. Шарун А.І., Юр'єва Л.М. Мета цього дослідження — виявлення найбільш релевантних психопатологічних особливостей дезадаптивних розладів, що виникають під впливом психоемоційного стресу в студентській спільноті, пов'язаних із наслідками військового конфлікту, та визначення потенційних обсягів діагностичних та лікувально-реабілітаційних заходів задля майбутнього підвищення ефективності первинної, вторинної та третинної їх профілактики. Дослідження було проведено в 4 етапи на підставі адаптованої анкети та комплексу психометричних методів, із залученням 249 дорослих студентів (старше 18-ти років), серед яких виділяється група респондентів найбільшого ризику – студентів, які є внутрішньо переміщеними особами, та студентів – дітей учасників антитерористичної операції. За результатами досліджень встановлено зниження рівня психологічного благополуччя, переважання серед провідних психопатологічних симптомів почуття неспокою, відсутність інтересу до життя, недостатність мотивації, втрата життєвої енергії, почуття безнадійності, думки про суїцид, соматичні симптоми у вигляді порушень функціонування кардіоваскулярної, гастроінтестинальної, респіраторної систем, вищі середні рівні вираженості астеничних проявів; гірші показники якості життя серед респондентів основної групи. Доведено зворотній кореляційний зв'язок між високим рівнем ситуативної тривоги ($r = -0,6$) і особистісної тривоги ($r = -0,45$) та низьким рівнем психічного благополуччя. Отримані результати можуть бути використані для обґрунтування та продовження трансформації системи соціально-медичного супроводу в рамках охорони здоров'я, зокрема при розробці заходів щодо попередження розвитку неспсихотичних психічних розладів серед студентської молоді в Україні, що сприятиме оптимізації використання людських ресурсів та подальшому зміцненню здоров'я населення.

Adaptation disorders and subclinical stress-induced conditions have a pronounced negative impact on quality of life [12, 14, 15, 16], they reduce effectiveness of educational activities and are accompanied with disruption of relationships with other people, increase the risk of substance abuse and suicide in students as well.

Solving problems of searching for regularities and mechanisms for adaptation of students to study at higher school inevitably leads to necessity to perform analysis of the entire complex of factors determining features of students' educational activity [4, 8]. In particular, psychological support of future physicians is critical because the society is facing a shortage of physicians during the COVID-19 pandemic [11].

Adaptation of students to study at higher educational institutions should be considered as a dynamic, multifaceted and comprehensive process of developing skills to meet the requirements imposed to students during the period of their study and education at higher school.

Student age is a special period of personality development, both in terms of “crisis saturation” (examination stresses, age problems, awareness of the

content of professional activity in the world of self-realization and self-actualization, etc.) and in terms of saturation of opportunities for maximum development of personality abilities and potential [6]. It has been proved that the main psychological condition for personality realization and development consists in the presence of interest in activity. Depending on how the potential psychological capabilities of a person, his/her inclinations, interests are realized, the professional level of a specialist is determined [5].

The modern society is on the stage of serious changes and demands in relation to future young specialists. Importance of revealing depressed and anxious moods in students is conditioned by the pace and intensity of training, which presents increased requirements to compensatory mechanisms of psyche (breakdown of these mechanisms leads to social and psychological conflicts and stress) [3].

The purpose of the study was to develop a system of diagnostics and further forecasting and prevention of adaptation disorders in students, who have experienced psychoemotional stress, on the basis of studying their clinical-psychopathological peculiarities and use of modern psychometric researches.

MATERIALS AND METHODS OF RESEARCH

The study was conducted on the basis of the Dnipro State Medical University (DSMU) and the Dnipro Basic Medical College (DBMC). In the framework of the study during the period of 2018-2020, 249 students aged over 18 years (average age 20.88 ± 2) of both sexes were tested. The study was conducted in several stages. The 1st stage – the process of screening the contingent, with an emphasis on students who had a history of psycho-emotional stress. The 2nd stage – characterological features, somatic status and socio-demographic characteristics of the studied respondents were studied. The 3rd stage – depending on the task, an in-depth examination of students was conducted with the selection of groups where based on the results of preliminary examination one of the following stress increasing factors was determined: 1) respondents – children of anti-terrorist operation participants (ATO); 2) respondents – internally displaced persons (IDP); 3) respondents – control group. The 4th stage – at the final stage the system of complex psycho-correction and therapeutic interventions has been developed.

During the examination, in addition to clinical and psychopathological research method, anamnestic, socio-demographic, and psychodiagnostic research methods were used, in particular:

- scales of psychological well-being (K. Ryff, 1989, Adaptation by T.D. Shevelenkova, P.P. Fesenko, 2005) [9];

- the Leonhrad-Schmieschek's Questionnaire (H. Schmieschek, 1970) [17];

- the questionnaire of severity of psychopathological symptoms (Symptom CheckList-90-revised, L.R. Derogatis, in adaptation by N.V. Tarabrina, 2001) [11];

- the scale of the asthenical state (L.D. Malkova, according to adaptation by T.H. Chertov based on MMPI) [10];

- quality of life scale [7];

- integrative test of anxiety (A.P. Bizyuk, L.Y. Vasserman, B.V. Iovlev, 2005) [2].

The research was conducted in accordance with the principles of bioethics set out in the WMA Declaration of Helsinki – “Ethical principles for medical research involving human subjects” and “Universal Declaration on Bioethics and Human Rights” (UNESCO). The principles of voluntariness, anonymity and trust were observed during the work, all participants gave written informed consent to participate in the study.

Since March 2020 and introduction of the quarantine, which has particularly affected educational institutions for the purpose of adapting to the

new conditions of distance learning, surveys and information collection has been conducted using Google Forms in real-time (on-line) mode. Statistical processing of the results was done with the use of Microsoft Excel 2010 and software package STATISTICA 6.1 (StatSoftInc., Serial No. AGAR909E415822FA) [1]. The arithmetic mean (M); standard deviation (SD); minimum (min) and maximum (max) values in the sample; the lower quartel (Q25) and the upper quartel (Q75) were calculated. For an abnormal distribution the median (Me) was determined. The format of the data presented in the text and tables is as follows: $M \pm SD$; (min-max); Me (Q25-Q75). The analysis of differences was carried out using Mann-Whitney non-parametric test (U-Test), the difference between the groups was considered statistically significant at $p < 0.05$.

RESULTS AND DISCUSSION

Comparison of indicators of four groups according to the results of the methodology of psychological well-being scales revealed significant differences in the following scales: positive relations, personal growth, self-acceptance, environmental management (Fig. 1).

Among those surveyed with identified accentuations, the largest group consisted of persons with hyperthymic type (49.13%). Respondents noted intrapersonal difficulties associated with anxiety state, which is reflected in inconsistency and superficial behavior. The group of students with the exalted type of accentuation (43.93%) ranked second in number. The third place – the group of people with the fixedness-type accentuation. The groups with cyclic and emotive accentuation were also significant in number. The groups of dysthymic (3.03%), pedantic (4.61%), excitation-type (8.44%) accentuation were presented in a much lesser extent (Fig. 2).

Analysis of the structure of maladaptive manifestations in groups of students with accentuations of different types revealed the following features: the most accentuations are characterized by such cognitive reactions as thoughts of one's own bad luck, dissatisfaction with oneself, a sense of inevitability of punishment for one's own mistakes; these are reflected in behavior as indecision and a tendency to self-blame. Anguish and guilt prevail among the affective reactions to stress. In students with explosive accentuation somatic reactions prevail (fatigue, weight fluctuations, predisposition to seasonal diseases). Asthenic and hyperthymic accentuation is characterized by manifestations of depressive reactions in the process of adaptation to studying.

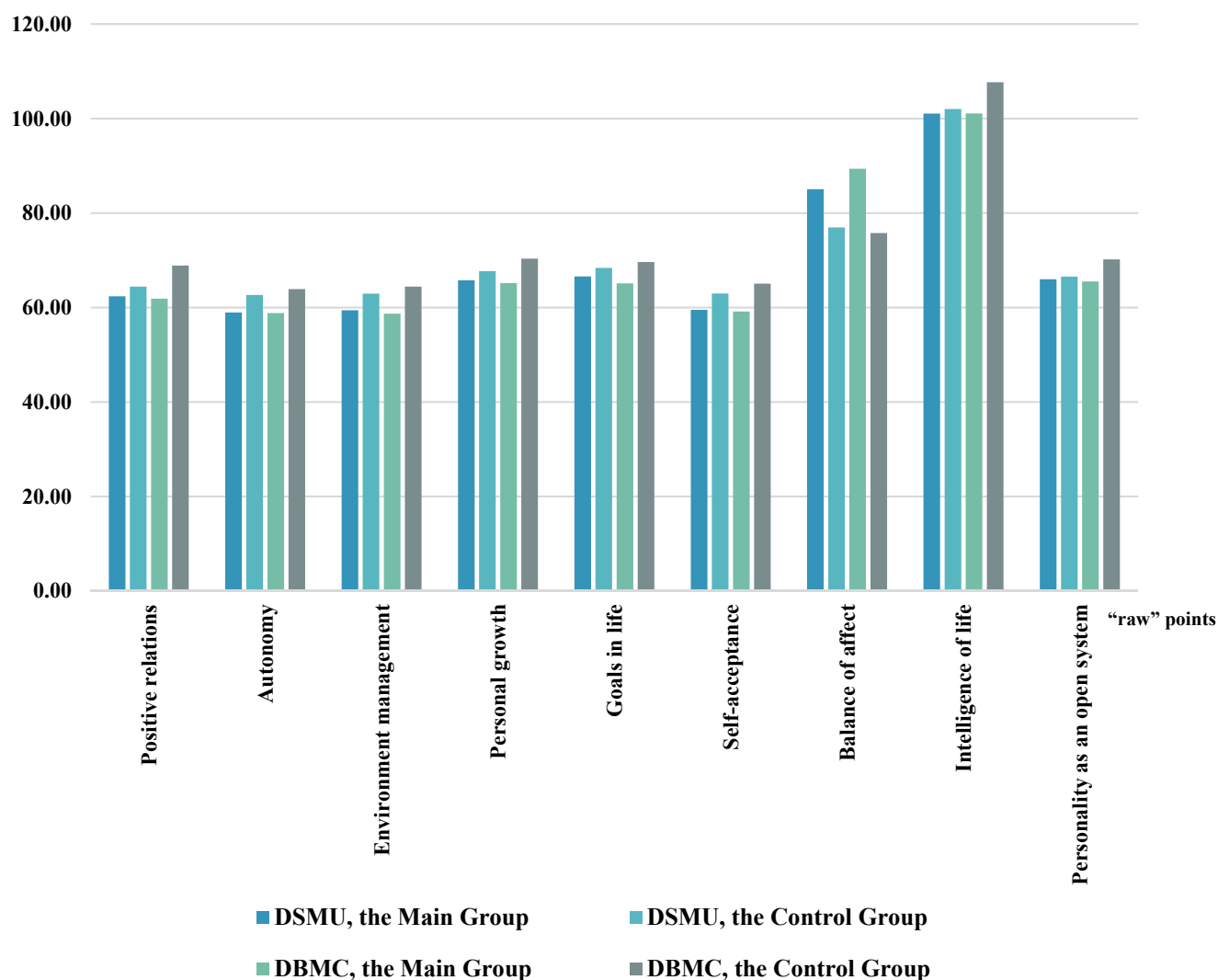


Fig. 1. Comparison of average values of indicators of psychological well-being of students of the main and control groups of the DSMU and DBMC (in “raw” points)

The analysis of clinical and psychopathological features of the examined persons with the help of the questionnaire of psychopathological symptoms gave an opportunity to determine severity of the main symptoms (Table). Thus, it was found that in the main group the value of interpersonal sensitivity (INT) dominated among the leading psychopathological symptoms; the respondents noted feelings of personal inadequacy and inferiority, especially when comparing themselves with others (0.78 ± 0.07). This syndrome was characterized by a heightened sense of self-awareness, negative expectations about interpersonal interaction and any communication with other people, self-condemnation, feelings of anxiety and noticeable

discomfort in the process of interpersonal interaction. In addition, depression (DEP) (0.63 ± 0.06) was defined in the main group alongside with anxiety, which was clinically shown by lack of interest to life, lack of motivation and loss of life energy, sense of hopelessness, thoughts about suicide. Somatic symptoms SOM (0.50 ± 0.06) in the form of complaints of headache, tension, muscle discomfort and dysfunction of the cardiovascular, gastrointestinal, respiratory systems, etc. were also expressed. The lowest scores were obtained on the scales of psychoticism (PSY) (0.20 ± 0.03), phobic symptoms (PHOB) (0.28 ± 0.04), which reflects the absence of hostility, hallucinatory-paranoid symptoms and severe fears.

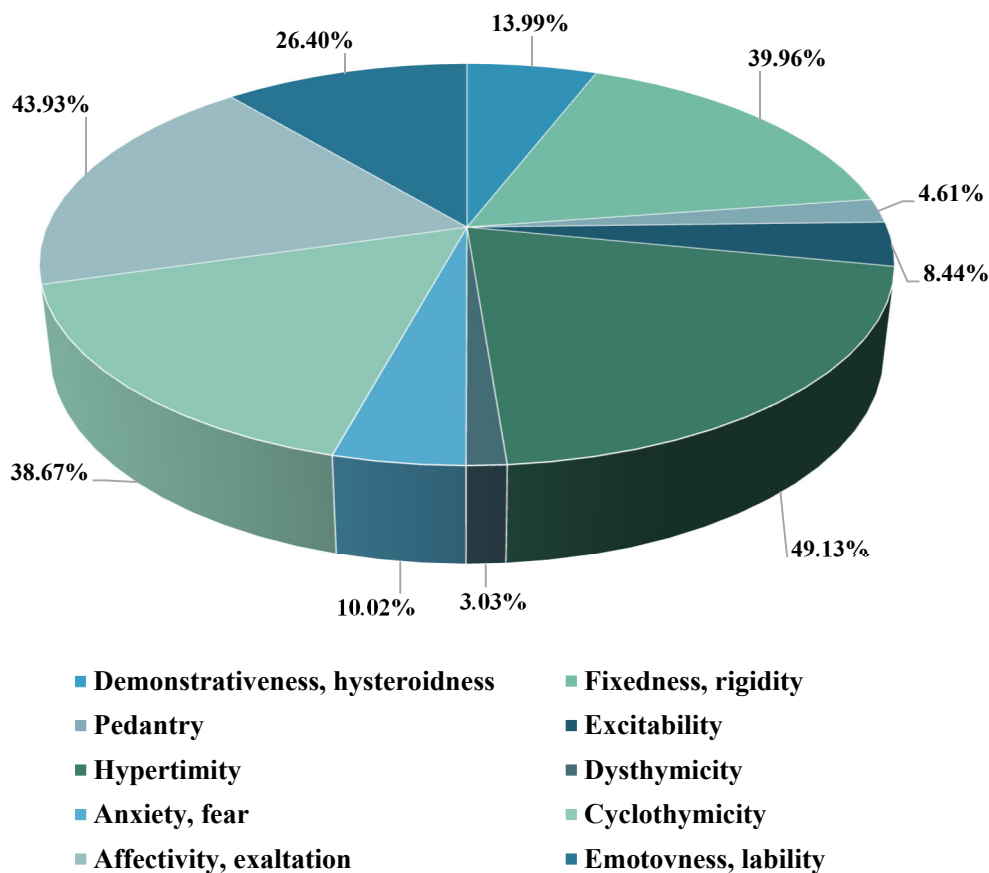


Fig. 2. Distribution of the selection of students in the main groups of DSMU and DBMC as for the prevailing accentuation of personality (%)

Among students of the main group there were higher average levels for severity of asthenic manifestations on the scale of asthenic condition 45.62 ± 1.11 points, at $p \leq 0.001$, compared with students of the control group who had the lowest results and amounted to 39.51 ± 1.06 points, respectively.

The quality of life was assessed using graphical scales according to the following indicators: “physical well-being”, “emotional well-being”, “self-service” and “independence of actions”, “working capacity”, “interpersonal interaction”, “social and emotional support”, “public and service support”, “personal realization”, “spiritual realization”, “general perception of life”; in the point system from 0 to 10. During the study of quality of life it was revealed that the students of the main group showed the worst indicators of “spiritual realization” (6.25 ± 0.23 points), “physical well-being” (7.39 ± 0.14) and “emotional well-being” (7.45 ± 0.17). The general indicator of quality of life among students of the

main group DSMU was 7.97 ± 0.15 points, at $p \leq 0.01$, and among students of the control group it was 8.65 ± 0.16 ; the respective values among DBMC students were 7.87 ± 0.40 and 8.8 ± 0.22 points.

An integrative anxiety test was used as an additional psychodiagnostic tool to study the level of anxiety.

As can be seen from the diagram, students who have experienced a psychoemotional stress have higher trait and state anxiety indicators compared to the control group (Fig. 3).

It should be noted that respondents with high leveled state anxiety showed expectations of negative evaluation or aggressive reaction, perception of unfavorable attitude toward themselves, threats of self-respect, prestige. Respondents with a high-leveled trait anxiety tend to be particularly sensitive to the effects of various stresses. Inverse correlation between a high level of state anxiety ($r = -0.6$) and trait anxiety ($r = -0.45$) and a low level of mental well-being has been found.

**Expression of psychopathological symptoms
in students of the main and control group
according to the data of SCL-90 questionnaire (in points)**

Subscales	Quantitative indicators, the main group					Quantitative indicators, the control group			
	M±m	Me	min-max	Q25-Q75	p	M±m	Me	min-max	Q25-Q75
SOM	0.50±0.06	0.33	0–3.08	0.08–0.58	0.0066	0.28±0.05	0.17	0–2.42	0–0.42
O-C	0.78±0.06	0.60	0–3.10	0.20–1.10	0.0010	0.43±0.06	0.25	0–2.50	0.1–0.70
INT	0.78±0.07	0.44	0–2.89	0.22–1.11	0.0002	0.36±0.05	0.22	0–2.33	0.11–0.44
DEP	0.63±0.06	0.38	0–3.00	0.15–1.00	0.0004	0.30±0.05	0.23	0–1.92	0.08–0.38
ANX	0.49±0.05	0.20	0–3.10	0.10–0.70	0.0001	0.21±0.05	0.10	0–1.80	0–0.20
HOS	0.54±0.05	0.33	0–2.67	0.17–0.83	0.0007	0.26±0.04	0.17	0–1.33	0–0.38
PHOB	0.28±0.04	0.00	0–2.43	0–0.43	0.0008	0.09±0.03	0.00	0–1.29	0–0.00
PAR	0.48±0.06	0.17	0–2.67	0–0.50	0.0130	0.19±0.03	0.17	0–1.00	0–0.33
PSY	0.20±0.03	0.10	0–1.20	0–0.20	0.0004	0.07±0.02	0.00	0–0.90	0–0.10
ADD	0.13±0.02	0.06	0–0.88	0–0.18	0.0066	0.06±0.01	0.03	0–0.35	0–0.12
GSI	0.05±0.005	0.04	0–0.24	0.01–0.08	0.0001	0.02±0.004	0.02	0–0.16	0.01–0.04
PDSI	26.81±1.76	22.00	0–81.00	9.0–40.00	0.0005	17.22±2.2	10.50	0–81.00	6.75–22.00
PSI	0.15±0.01	0.14	0–0.30	0.12–0.20	0.001	0.12±0.01	0.12	0–0.25	0.11–0.14

Notes: Somatization (SOM) – somatization subscale; Obsessive-Compulsive (O-C) – Obsessive-compulsion subscale; Interpersonal Sensitivity (INT) – interpersonal sensitivity subscale; Depression (DEP) – depression subscale; Anxiety (ANX) – anxiety subscale; Hostility (HOS) – hostility subscale; Phobic Anxiety (PHOB) – phobic anxiety subscale; Paranoid Ideation (PAR) – paranoid ideation subscale; Psychoticism (PSY) – psychoticism subscale; Additional Items (ADD) – additional items; GSI – general symptom index; PDSI – present distress symptom index; PSI – general number of positive answers.

According to the results obtained, psychological distress contributes significantly to adjustment problems of medical students. The results of this study revealed a high prevalence of anxiety, depression, and asthenic condition among medical students, with statistically significant differences for respondents who had a history of psycho-emotional

stress. This information can have implications for counseling in colleges and universities to provide early intervention and prevention programs to students' mental health well-being so that can improve their knowledge and skills to become more resilient in facing academic and life difficulties.

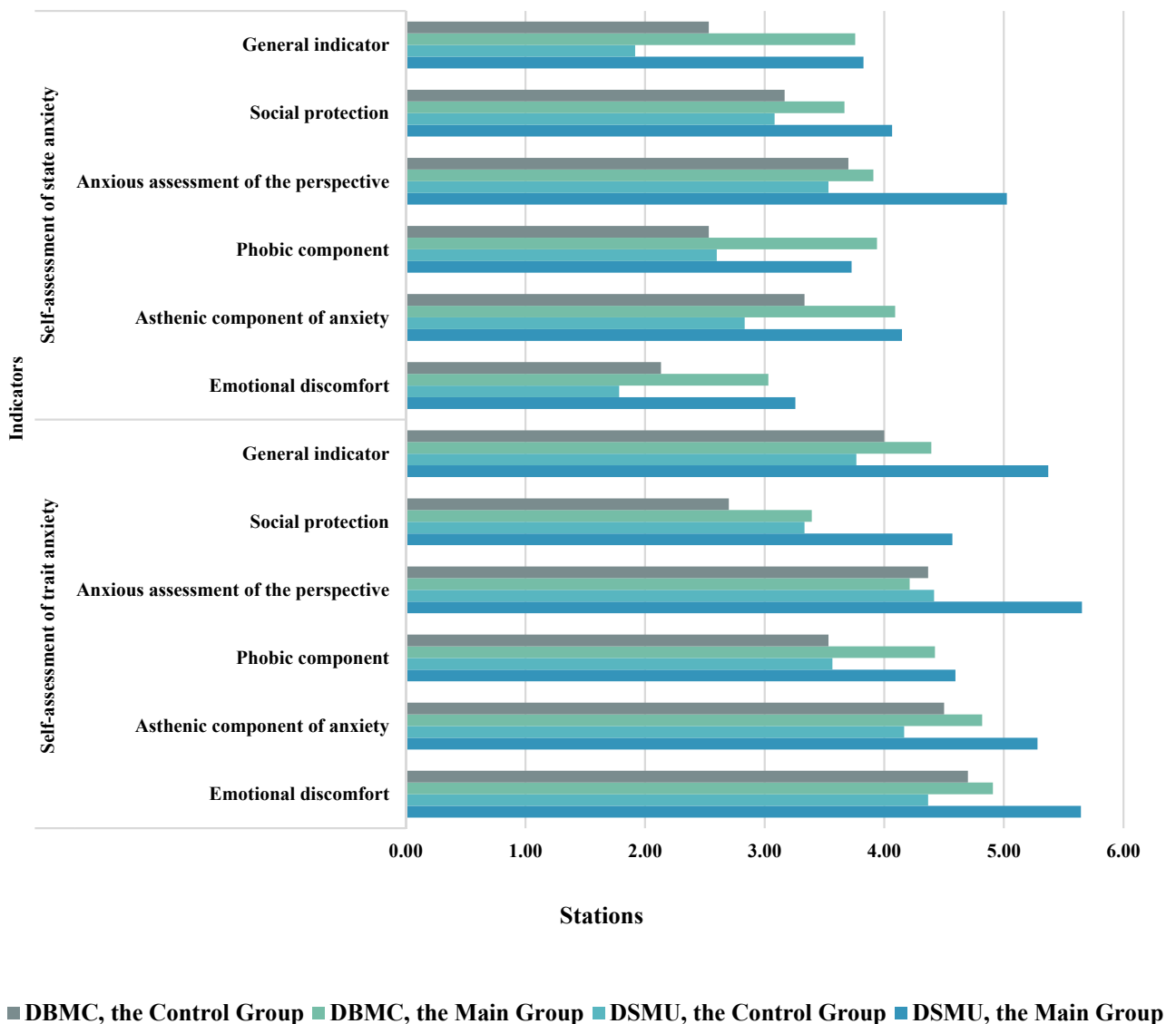


Fig. 3. Indicators of trait and state anxiety in students of the Dnipro State Medical University (DSMU) and the Dnipro Basic Medical College (DBMC) (in stanines)

CONCLUSIONS

The performed study gives an opportunity to make the following conclusions:

1. For students who have experienced a psychoemotional stress, the level of most components determined for psychological well-being, especially positive relations, personal growth, self-acceptance, environment management tend to decline.
2. Accentuation of personality is associated with a high risk of maladaptation: the respondents had intrapersonal difficulties associated with situational anxiety, behavioral indecision, self-blame, longing, guilt, anguish, weight fluctuations, and predisposition to seasonal diseases.

3. In students with a significant psychotraumatic factor the following symptoms were dominant in the anamnesis: negative expectations about interpersonal interaction and communication, self-condemnation, feelings of anxiety, lack of interest in life, lack of motivation, loss of vital energy, feelings of hopelessness, suicidal thoughts, somatic symptoms such as headache, tension, muscle discomfort and dysfunctions of cardiovascular, gastrointestinal and respiratory systems.
4. There were higher average levels of asthenic manifestations among students from the Main Group, and they were manifested through decreased activity,

increased interpersonal conflict, decreased mental capacity, memory impairment, and decreased productivity, increased fatigue. In the course of the quality of life study, the worse indicators were found under “spiritual realization”, “physical well-being”, “emotional well-being” and the general indicator of quality of life of respondents from the main group.

5. Inverse correlation between a high level of state anxiety ($r = -0.6$) and trait anxiety ($r = -0.45$) and a low level of mental well-being has been proved. In general, the respondents of the main group are prone to special sensitivity to the action of various stress factors.

6. Thus, the peculiarities of clinical and psychopathological symptoms of maladaptive disorders

in persons who have experienced psycho-emotional stress revealed in the study are the basis for the development of programs for prevention and treatment of at-risk groups at higher education institutions.

Contributors:

Yuryeva L.M. – conceptualization, administration, validation;

Sharun A.I. – investigation, formal analysis, resources, data curation, writing – original draft, writing – review & editing, visualization.

Funding. This research received no external funding.

Conflict of interests. The authors declare no conflict of interest.

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Стаття надійшла до редакції
05.10.2021