

VOLUME LXXVI, ISSUE 5 PART I, MAY 2023

ISSN 0043-5147

E-ISSN 2719-342X

Wiadomości Lekarskie Medical Advances



Official journal of Polish Medical Association has been published since 1928



ALUNA Publishing House



Memory of
dr Władysław
Biegański

Wiadomości Lekarskie is abstracted and indexed in: PUBMED/MEDLINE, SCOPUS, EMBASE, INDEX COPERNICUS,
POLISH MINISTRY OF EDUCATION AND SCIENCE, POLISH MEDICAL BIBLIOGRAPHY

Copyright: © ALUNA Publishing House.

Articles published on-line and available in open access are published under Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International (CC BY-NC-ND 4.0) allowing to download articles and share them with others as long as they credit the authors and the publisher, but without permission to change them in any way or use them commercially.

The journal *Wiadomości Lekarskie* is cofinanced under Contract No.RCN/SN/0714/2021/1
by the funds of the Minister of Education and Science



Wiadomości Lekarskie Medical Advances

Editor in-Chief:

Prof. Władysław Pierzchała

Deputy Editor in-Chief:

Prof. Aleksander Sieroń

Statistical Editor:

Dr Lesia Rudenko

Managing Editor:

Agnieszka Rosa – amarosa@wp.pl

International Editorial Office:

Nina Radchenko (editor)

– n.radchenko@wydawnictwo-aluna.pl

Polish Medical Association (Polskie Towarzystwo Lekarskie):

Prof. Waldemar Kostewicz – President PTL

Prof. Jerzy Woy-Wojciechowski – Honorary President PTL

International Editorial Board – in-Chief:

Marek Rudnicki

Chicago, USA

International Editorial Board – Members:

Kris Bankiewicz	San Francisco, USA	George Krol	New York, USA
Christopher Bara	Hannover, Germany	Krzysztof Łabuzek	Katowice, Poland
Krzysztof Bielecki	Warsaw, Poland	Jerzy Robert Ładny	Białystok, Poland
Zana Bumbuliene	Vilnius, Lithuania	Henryk Majchrzak	Katowice, Poland
Ryszarda Chazan	Warsaw, Poland	Ewa Małecka-Tendera	Katowice, Poland
Stanislav Czudek	Ostrava, Czech Republic	Stella Nowicki	Memphis, USA
Jacek Dubiel	Cracow, Poland	Alfred Patyk	Gottingen, Germany
Zbigniew Gasior	Katowice, Poland	Palmira Petrova	Yakutsk, Russia
Mowafaq Muhammad Ghareeb	Baghdad, Iraq	Krystyna Pierzchała	Katowice, Poland
Andrzej Gładysz	Wrocław, Poland	Waldemar Priebe	Houston, USA
Nataliya Gutorova	Kharkiv, Ukraine	Maria Siemionow	Chicago, USA
Marek Hartleb	Katowice, Poland	Vladyslav Smiiianov	Sumy, Ukraine
Roman Jaeschke	Hamilton, Canada	Tomasz Szczepański	Katowice, Poland
Andrzej Jakubowiak	Chicago, USA	Andrzej Witek	Katowice, Poland
Peter Konturek	Saalfeld, Germany	Zbigniew Wszolek	Jacksonville, USA
Jerzy Korewicki	Warsaw, Poland	Vyacheslav Zhdan	Poltava, Ukraine
Jan Kotarski	Lublin, Poland	Jan Zejda	Katowice, Poland

Distribution and Subscriptions:

Bartosz Guterman prenumerata@wydawnictwo-aluna.pl

Graphic design / production:

Grzegorz Sztank

www.red-studio.eu

Publisher:

ALUNA Publishing House

ul. Przesmyckiego 29,

05-510 Konstancin – Jeziorna

www.wydawnictwo-aluna.pl

www.wiadomoscilekarskie.pl

www.wiadlek.pl

CONTENTS

ORIGINAL ARTICLES

- Vladyslav V. Smiiianov, Svitlana M. Piven, Natalia O. Dryga, Olha I. Smiiianova, Inna O. Plakhtiiienko, Natalia G. Kuchma, Kateryna I. Zhuk
 MEDICAL AND SOCIAL ANALYSIS OF PATIENTS WHO DIED OF SARS-COV-2 IN THE SPECIALIZED INFECTIOUS DEPARTMENT
 OF THE CITY OF SUMY DURING THE FIRST WAVE OF THE EPIDEMIC 891
- Włodzisław Kuliński, Emilia Gryl
 HIPPOThERAPY IN CEREBRAL PALSY – SURVEY RESEARCH 897
- Hanan Diekan Abbas, Ahmed Hassan Kudhair
 THE EFFECT OF COVID-19 INFECTION ON THE INCIDENCE OF THE RENAL ABNORMALITY FOR THE PATIENT ADMITTED
 IN TO THE COMMUNICABLE DISEASE UNITE AT AL-HAKEEM HOSPITAL 907
- Iryna R. Vyshnevskya, Tatyana Storozhenko, Mykola P. Kopytsya, Natalia V. Bila, Andrii Kis, Mohammad Kaaki
 THE ROLE OF BIOMARKER MACROPHAGE MIGRATION INHIBITORY FACTOR IN CARDIAC REMODELING PREDICTION IN PATIENTS
 WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION 911
- Vladyslav A. Smiiianov, Leonid B. Markin, Tetiana V. Fartushok, Svitlana R. Slavitych
 EFFECTIVENESS OF THE MAGNESIUM APPLICATION IN OBSTETRICAL PRACTICE 920
- Maksym Herasymiuk, Andrii Sverstiuk, Iryna Kit
 MULTIFACTOR REGRESSION MODEL FOR PREDICTION OF CHRONIC RHINOSINUSITIS RECURRENCE 928
- Anastasiia Efimenko, Oksana Ishchenko, Oleksii Stepanskyi, Dmytro Stepanskyi
 MICROBIOLOGICAL FEATURES OF *STAPHYLOCOCCUS* ASSOCIATED WITH COMPLICATIONS OF DENTAL IMPLANTATION 936
- Basma Adel Ibrahim, Sawsan Ali Hussein, Wasnaa Hadi Abdullah
 COGNITIVE FUNCTIONS IN CHILDREN WITH TYPE I DIABETES 944
- Saad H. Al-Badry, Nowar Gassan Ibrahim, Haider Abdulkareem AlMashhadani, Mustafa M. Kadhim
 THE ROLE OF OXIDATIVE STRESS IN PATIENTS WITH CHRONIC KIDNEY DISEASE 951
- Valeriy Zub, Elina Manzhali
 ASSESSMENT OF QUALITY OF LIFE IN PATIENTS WITH GASTRIC CANCER IN UKRAINE 956
- Svitlana I. Chepyshko, Oleh O. Maksymiv, Mykola L. Gomon, Vitaliy I. Rozhko, Stepan V. Tkachyk, Halyna Yu. Tsymbaliuk, Larysa Ya. Fedoniuk
 RESULTS OF INFLAMMATORY AND IMMUNOLOGICAL PARAMETERS OF THE ORAL CAVITY AFTER CYSTECTOMY WITH DIFFERENT
 METHODS OF CONNECTING THE EDGES OF THE OPERATED AREA 964
- Tetiana B. Kodlubovska, Liudmyla V. Piankivska, Volodymyr V. Krasnov, Larisa Yu. Babintseva
 RELATIONSHIP BETWEEN PROFESSIONAL MALADAPTATION OF DOCTORS – INTERNS WITH THE MEANINGFULNESS OF LIFE 972

Ahmed Khalaf Jasim, Dhiaa Jabir Aljuburi, Ali Abbar Mazael, Osamah Aldulhasan, Tamam Alaa Abdulzahra EVALUATION OF VEST-OVER-PANT TECHNIQUE IN THE TREATMENT OF POST-HYPOSPADIAS URETHROCUTANEOUS FISTULA	978
Iryna M. Nikitina, Anna A. Synkina, Yulia B. Yakymchuk, Natalia P. Sukhostavets, Tetiana V. Kopytsia, Svitlana F. Herasymenko, Tetiana V. Babar MENSTRUAL DISORDER IN ADOLESCENTS DURING WAR	984
Viktor M. Shevchuk, Oleg L. Musiienko, Mykyta O. Sokolenko CRIMINAL OFFENCES RELATED TO ILLICIT TRAFFICKING IN FALSIFIED MEDICINES: INVESTIGATION PROBLEMS	992
Mahmood Jawad, Karam Al-Akkam, Manar Mohammed, Saif M. Hassan ROLE OF DIMETHYL FUMARATE (NRF2 ACTIVATOR) IN REDUCING OF CIPROFLOXACIN-INDUCED HEPATOTOXICITY IN RATS VIA THE NRF2/HO-1 PATHWAY	1001
Liudmyla M. Tantsura, Olena Yu. Pylypets, Dmytro V. Tretiakov, Yevhen O. Tantsura VARIANTS OF THE FORMATION AND COURSE OF DRUG-RESISTANT EPILEPSY IN CHILDREN WITH GENETIC POLYMORPHISMS OF <i>CYP2C9</i> , <i>CYP2C19</i> , <i>CYP3A4</i>	1007
Mykhailo S. Myroshnychenko, Nana M. Pasiyeshvili, Nataliia V. Kapustnyk, Volodymyr D. Markovskiy, Yuliia M. Kalashnyk-Vakulenko, Olga V. Zaytseva, Maryna A. Bondarenko, Oleksandr V. Morozov, Dmytro V. Molodan MORPHOLOGICAL ASSESSMENT OF THE LUNGS IN POST-COVID-19 SYNDROME: ANALYSIS OF AUTOPSY MATERIAL	1014
Vitalii V. Ilika, Oleksandra V. Garvasiuk, Oleksandra I. Dogolich, Batih V. Iryna THE FEATURES OF LIMITED PROTEOLYSIS IN PLACENTAL FIBRINOID IN COMBINATION WITH INFLAMMATION AND IRON DEFICIENCY ANEMIA OF PREGNANT WOMEN	1022
Vira Y. Tseluyko, Larysa M. Yakovleva, Olha V. Radchenko, Andriy V. Zhadan, Svitlana M. Sukhova, Oleksandr M. Gurov, Roman N. Askierov PECULIARITIES OF THE COURSE OF PULMONARY EMBOLISM DURING THE COVID-19 PANDEMIC	1029
Zahraa N. Fakhreldain, Hayder Ch. Assad EVALUATION THE PREVALENCE OF MULTIDRUG RESISTANCE BACTERIA AMONG IRAQI PATIENTS AND ITS ASSOCIATION WITH PATIENTS' PREDICTIVE FACTORS: A CROSS-SECTIONAL STUDY	1039
Iryna Khomenko, Oleksandra Ivakhno, Yaroslav Pershehuba, Nataliia O. Serohina TRANSFORMATION CHANGES OF PUBLIC HEALTHCARE WITHIN EPIDEMIOLOGICAL RISK MANAGEMENT LEVEL	1049
Borys Palamar, Svitlana Palamar, Tetiana Miyer, Victoria Zhelanova, Sergey Tukaiev, Hennadii Bondarenko, Natalya Holota STUDYING ANXIETY AS A PREDICTOR IN STUDENTS TO PREDICT THE DEVELOPMENT OF BURNOUT	1054
REVIEW ARTICLES	
Klaudia Ból, Aleksandra Brudzińska, Łukasz Wybrańczyk, Adam Właszczuk EFFECT OF HORMONAL CONTRACEPTION ON DEPRESSION IN WOMEN	1062

Iryna Iakovets, Anatolii Stepanyuk, Valentyna Zverkhovska PENITENTIARY MEDICINE IN THE CONTEXT OF NATIONAL HEALTH CARE REFORM IN UKRAINE	1068
Oleksandr A. Halushko, Olga V. Protsiuk, Oksana I. Pogorila, Maksym M. Synytsyn HYPOGLYCEMIA IN PATIENTS WITH COVID-19: A COINCIDENCE OR A TREND?	1075
Nataliia M. Akhtyrska, Olena Yu. Kostiuchenko STATE REGISTRY OF HUMAN GENOMIC INFORMATION IN UKRAINE: HOW TO ACHIEVE A BALANCE BETWEEN LAW, MEDICINE AND ETHICS	1083
Victoriia V. Haltsova, Sergiy O. Kharytonov, Andrii M. Iashchenko HARM TO LIFE AND HEALTH AS A RESULT OF ACTS OF ILLEGAL ADOPTION: CRIMINAL LEGAL AND MEDICO-PSYCHOLOGICAL ASPECTS	1090
Iryna Iakovets, Olena Haltsova, Oksana Kashyntseva ENSURING THE RIGHT TO HEALTH CARE FOR GROUPS VULNERABLE TO HIV IN PENITENTIARY INSTITUTIONS AND PRE-TRIAL DETENTION CENTERS IN UKRAINE	1097
Larysa Grynko, Hennadii Chorny, Maryna Kostenko SALE OF FALSIFIED MEDICINES VIA THE INTERNET IN UKRAINE: PROBLEMS OF DETECTION AND COUNTERACTION	1106
Halyna V. Bilavych, Natalia V. Sultanova, Iryna S. Litvinenko, Jan V. Biławicz, Nadiya O. Fedchyshyn, Larysa Ya. Fedoniuk, Borys P. Savchuk ANTI-ALCOHOL EDUCATION OF CHILDREN, YOUTH AND ADULTS AS A FACTOR IN THE FORMATION OF HEALTH-SAVING COMPETENCE THROUGH THE PRISM OF THE HISTORICAL EXPERIENCE OF UKRAINE	1113
CASE STUDIES	
Natalya B. Gubergrits, Tetiana L. Mozhyna, Oleksii V. Tsys, Venera S. Rakhmetova GASTRIC AND DUODENAL AMYLOIDOSIS IN AN HIV-INFECTED PATIENT: A CASE REPORT AND A LITERATURE REVIEW	1121
LETTER TO EDITOR	
Julia Maya Nowak A NEW OUTLOOK ON PATIENT CARE – MY EXPERIENCE AT MAYO CLINIC AS AN INTERNATIONAL MEDICAL STUDENT	1130

ORIGINAL ARTICLE

STUDYING ANXIETY AS A PREDICTOR IN STUDENTS TO PREDICT THE DEVELOPMENT OF BURNOUT

DOI: 10.36740/WLek202305125

Borys Palamar¹, Svitlana Palamar², Tetiana Miyer², Victoria Zhelanova², Sergey Tukaiev³, Hennadii Bondarenko², Natalya Holota²

¹BOGOMOLETS NATIONAL MEDICAL UNIVERSITY, KYIV, UKRAINE

²BORYS GRINCHENKO KYIV UNIVERSITY, KYIV, UKRAINE

³NATIONAL UNIVERSITY OF UKRAINE ON PHYSICAL EDUCATION AND SPORTS, KYIV, UKRAINE

ABSTRACT

The aim: Research of a subjectively significant personal social-psychological and individual-psychological characteristic – anxiety in students, which can be a predictor of the occurrence of EBS. To identify the scale and prevalence of the specified predictor in the student environment.

Materials and methods: A survey was conducted among 556 respondents. The survey was conducted according to the Spielberg-Hanin Anxiety Scale, which is available online with automatic scoring and retrieval of results. The test involves determining the levels of situational (reactive) and personal anxiety. To achieve the goal of the research, a set of methods was used: a systematic approach, a sociological method, and a medical-statistical method. The data are provided in the form of relative values with errors.

Results: Almost half of the students who participated in the study feel the influence of the anxiety factor, which increases the likelihood of emotional burnout. The “tension” phase – nervous (anxious tension) is a harbinger and “trigger” mechanism in the formation of emotional burnout. According to the results of the study, up to 50% of respondents are in the first phase of emotional burnout or have already passed it. This determines the need for preventive work with students, among whom the survey was conducted, to prevent the occurrence of emotional and, subsequently, professional burnout. The low level of anxiety, which was $8.49\% \pm 1.18\%$ among respondents, needs further study, as it may indicate the suppression of experiences by consciousness and hidden anxiety, which is an even more provoking factor for emotional burnout than a high level of anxiety.

Conclusions: Empirical research has established a significant prevalence among students of a high and medium level of personal characteristic – anxiety, which has signs of a negative internal factor and can be a predictor of the development of EBS.

KEY WORDS: stress, emotional burnout syndrome (EBS), anxiety, predictor, personal characteristic, individual factor

Wiad Lek. 2023;76(5 p.1):1054-1061

INTRODUCTION

Burnout is considered a form of professional stress. [1-4] According to the International Classification of Diseases (ICD-X) (ICD-10), the syndrome of emotional burnout is assigned to the rubric Z73 – “Stress associated with difficulties in maintaining a normal lifestyle.” The World Health Organization defines occupational stress as a “disease of the 21st century” because it is present in any profession, and its spread has reached epidemic proportions, affecting workers of various professions and fields of activity.

This medical problem has devastating consequences for society, professional and family relationships. It is based on mental and behavioral changes. Emotional burnout syndrome (EBS) is found in more than 40% of public sector workers in the US and Canada, 51% of nurses and paramedics, 54% of doctors, and 57% of teachers. [2].

According to statistics for 2019, about 210 million people in the world suffer from burnout syndrome, which is approximately 5-7% of the entire population. According to the results of a July 2020 survey conducted by FlexJobs and Mental Health America (MHA), 75% of workers have experienced burnout, and 40% of respondents believe that this is a direct result of the coronavirus pandemic.

Today it is known that the development of EBS is dependent on the activity (study or work) of a person, which leads to despair. As a rule, there is a dissonance between personal contribution to work and the received or expected reward.

Most often, EBS develops in people who, by their profession, communicate a lot. This category includes doctors, nurses, teachers, social workers, and many other professions. It is known that the percentage

of EBS among doctors and, unfortunately, students, in particular doctors, can reach up to 50% [5, 6]. The existence of the problem of EBS among students is confirmed by many domestic and foreign scientists [6-10]. Moreover, the percentage of EBS in this category can reach 45-52.8% [5, 6]. Factors that negatively affect the development of emotional burnout in the student environment are social insecurity, dissatisfaction with the learning process, the presence of social comparison, unfairness in evaluation, the unfulfillment of expected dreams regarding education and the future profession, difficulty in communication, and the presence of competition. All this leads to a decrease in motivation in learning with certain consequences. At the same time, it is known that motivational factors are leading to the successful adaptation of students to study, and also that high motivation to study is a safeguard against emotional burnout. This motivation can be reduced when applicants submit documents for admission to different universities at the same time, which sometimes leads to a random choice of a future profession, and not according to their desire. In this case, there is no consistency of the individual typological features of the personality with the choice of the future [8].

Scientists have discovered the dependence of emotional burnout (EB) in students on the peculiarities of the motivational, semantic and communicative spheres. Thus, in individuals who are afraid of failure and have no hope of success in their activities, EB is formed faster. This is especially noticeable during the formation of the resistivity phase. There is a direct correlation between «motivation to prevent failure» with the development of «exhaustion». «Communicative motive» is considered to be the most important factor in the formation of burnout [6]. The conclusion of the past, dissatisfaction with the present, and one's achievements in persons with EB concentrate attention on negative experiences and vice versa, satisfaction with one's life reduces the risk and difficulty of developing emotional burnout [8].

To date, the study of EBS does not have results in the form of a single system of psychological determinants of this phenomenon. Factors causing EB are grouped according to signs of professional activity and individual characteristics. Individual factors include age, gender, education, marital status, work experience, and personal characteristics (endurance, locus of control, resistance style, self-esteem, anxiety, neuroticism, and extraversion). Sometimes a third group of factors is singled out, where meaningful aspects of activity are considered independent. These can be – working conditions, work overload, duration of the working day, the content of work, the number of patients or students and, conversely, the difficult relationship

between the student and the teacher, the complexity of their problems, the depth of contact with patients, students, teachers, participation in decision-making, feedback connection [11]. If some foreign researchers consider the presence of organizational problems to be the main prerequisite of EB, other researchers prefer personal characteristics – low self-esteem, high neuroticism, anxiety, and externality [12]. According to some scientists, nervous (anxious) tension is a harbinger, and at the same time acts as a “starting” mechanism in the formation of EB. The dynamic nature of the tension is indicated by the constancy, which is exhausting and the strengthening of psychologically traumatizing factors. Considering that the first “phase” or “stage” of EB is very anxious stress-anxiety, it can be assumed that high anxiety is not just an influencing factor, but its presence indicates the initial phase of EB in a person. This is confirmed by the authors of the dynamic model.

The occurrence of burnout depending on personal characteristics should be considered from the standpoint of their complex impact on the individual. The five-factor personality model proposed by P. Costa and R. McCrae is most often used in research on this issue. Personal factors affecting the appearance of emotional burnout include anxiety, emotional reactivity, and negative affect [13]. Scientists point to a positive relationship between burnout and aggressiveness and a negative relationship between burnout and a sense of group cohesion. This negative relationship between burnout and social support can be seen in helping professions. Stressful situations provoke the activation of anxiety symptoms in a person. There is a direct dependence of this activation on the number of stressful situations. That is why psychologists, psychiatrists, sociologists, and medical workers point to the necessity and urgency of researching the phenomenon of anxiety [12].

Anxiety is defined as a person's experience of a state of emotional discomfort caused by the expectation of an unfavorable development of events or a premonition of possible danger. [8].

Given that anxiety is a basic component in intra-individual personality development, it has a strong influence on professional and academic success. It is necessary to distinguish when anxiety is a natural feeling in front of any incomprehensible circumstances (unknownness, threat, danger) and when anxiety is inadequate, mostly an intense reaction to some life circumstances or interpersonal manifestations. Scientists interpret the causes and manifestations of anxiety in different ways. Thus, L. Burlachuk says that anxiety is a person's tendency to experience and worry, and the main thing is that such a person has a low threshold for

anxiety. R. Nemov considers anxiety to be a personal trait, which is characterized by an increase in the level of anxiety, anxiety, and fear in various non-standard conditions and situations. V. Davydov also considers anxiety as an individual property, quality, and feature. He considers anxiety to be a manifestation of worry, experiencing both negative thoughts and feelings and fear. The scientist points out that such an experience can also be characteristic of situations where there is no threat or danger. Summing up the opinion of scientists, R. May claimed that the constructs of personality anxiety are: a psychological property; an individual feature of an individual; the individual's tendency to experience anxiety; a state of high tension and anxiety. Z. Freud distinguished between the concepts of «fear» and «anxiety». He considered anxiety a reaction to an unknown (sometimes groundless) danger and fear a reaction to a real danger. V. Merlin focused the attention of scientists on the emotionality of anxiety and believed that it would manifest itself in various threatening situations. And his colleague, the American psychologist K. Izard, considers anxiety to be a combination of negative emotions, for example, anger, sadness, and fear [14]. According to Ch. Spielberger, anxiety is an emotional state or reaction, where there is intensity, variability, perceived unpleasant experiences, fears, and activation of the autonomic nervous system [15].

Anxiety as a dominant symptom of neurotic disorders can take different forms. Anxiety that manifests itself in various phobias is called phobic. It is characterized by isolation and has a strong intensity of manifestation. There is a desire to avoid stimuli that carry a threat and danger. Panic anxiety is also called paroxysmal – it manifests itself as a momentary reaction, usually in the form of episodes, more often in a person who has panic disorders. Generalized anxiety is manifested in general anxiety disorder of the personality. As a rule, these manifestations are intense and obsessive. Somatophoric personality disorders are characterized by anxiety, which is manifested in a person's complaints about somatic disorders, but this is not confirmed by a medical examination. Reaction to unexpected situations, post-traumatic stress disorders, as well as disorders that are associated with maladjustment is considered anxiety that occurs as a response to a stressful situation.

Secondary anxiety is distinguished, which has symptoms of mental and somatic disorders and can be a reaction to the use of psychoactive and psychotropic substances [12].

The state of anxiety, as a rule, is accompanied by tension, nervousness, and various fears, especially the fear of failure and unmotivated restlessness. Psychologists consider anxiety to be a leading component in

the personality structure. Elizabeth Römer and Thomas Borkovcs point out that disturbing thoughts in the brain of an individual tend to move continuously: one disturbing thought is replaced by the next and so on in a circle [16].

THE AIM

Study of a subjectively significant personal social-psychological and individual-psychological characteristic – anxiety in students, which can be a predictor in the occurrence of EBS. To identify the scale and prevalence of the specified predictor in the student environment.

MATERIALS AND METHODS

The scientific research was carried out based on the O.O. Bogomolets National Medical University and T.G. Shevchenko Kyiv National University. A survey was conducted among students using the anonymous questionnaire method. The scope of the study was 610 respondents. At the same time, the results of the questionnaires of 54 respondents were not taken into account due to insincerity in the answers. Insincerity in answers was determined by the scale of lies according to the Eysenck method (EPI, option B).

The primary material was 556 questionnaires of sociological research based on the version of the standardized questionnaire for the analysis of indicators of personal anxiety according to the Spielberg-Hanin method of RPAS (reactive and personal anxiety scale). This questionnaire consists of 20 statements that refer to anxiety as a state (state of anxiety, reactive or situational anxiety) and 20 statements to define anxiety as a disposition, a personality trait (trait anxiety). The Spielberg-Hanin scale of reactive and personal anxiety is the only method that allows differential measurement of anxiety both as a personality trait and as a state.

228 surveyed students study at O. O. Bogomolets National Medical University and 328 – at T. G. Shevchenko Kyiv National University, which is 41.01% and 58.99%, respectively, of all surveyed respondents.

To achieve the goal of the research, a complex of research methods was used, the main of which was the systematic approach. The sociological method was used for the analysis of documents and questionnaire survey with notification of the purpose and task of the study, with the mandatory obtaining of prior oral voluntary consent to participate in anonymous questionnaires. The medical-statistical method was used at several stages of the research: at the first stage, the purpose of the research was formulated, the research plan and program were drawn up, the object and the observation

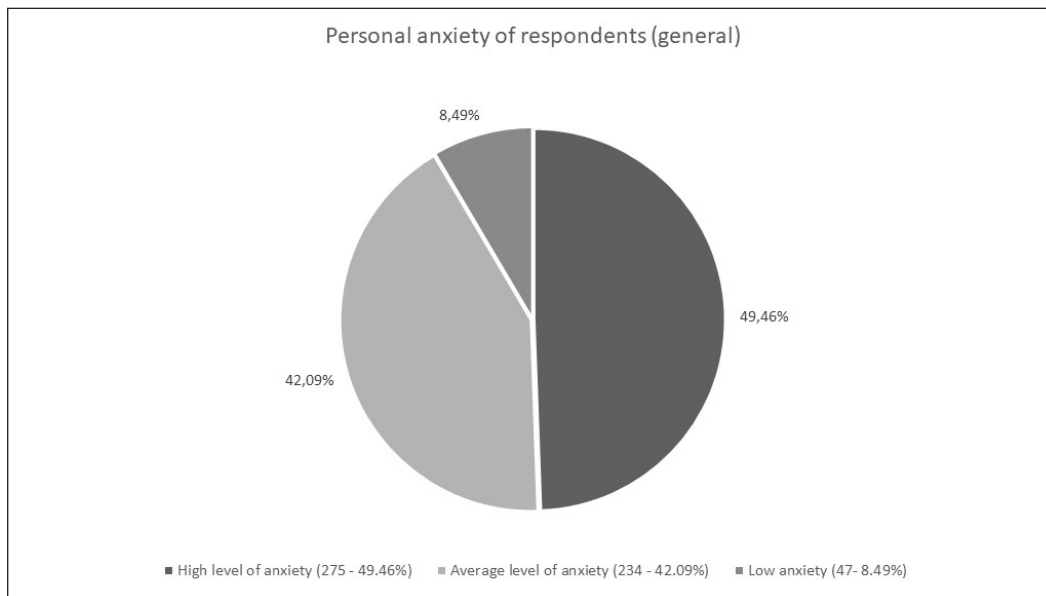


Fig. 1. Personal anxiety of respondents (general)

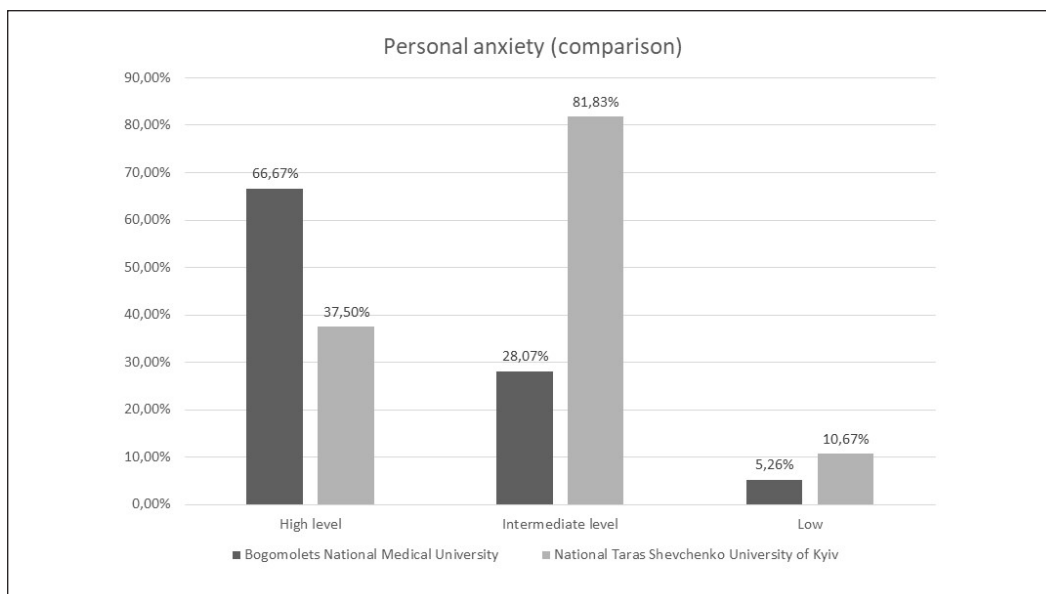


Fig. 2. Personal anxiety (comparison)

unit were determined; at the second stage, the information collection was carried out; at the third stage – the grouping of the received data according to the relevant characteristics according to the research program and compilation of statistical data; at the fourth stage, the analysis of the obtained results was performed.

The data are provided in the form of relative values with errors [1].

RESULTS

Why do young people who are students lose interest in learning? Why is the motivation to study a profession that should become the basis of a lifetime, the foundation of well-being becomes less than in some other circumstances? Explanations can be different. Psychologists, most often, explain this by the develop-

ment of burnout and indicate that anyone can suffer from this disease.

To study this phenomenon, and its possible development and distribution among students, we conducted a study of personal characteristics, in particular anxiety, which can be a predictor in the genesis of burnout.

The research took into account the results of a survey of 556 people, of which 228 people study at the O. O. Bogomolets National Medical University and 328 at the T. G. Shevchenko Kyiv National University, which is 41.01% and 58.99% accordance. The data are presented in Table I.

According to the results of the study, when analyzing indicators of personal anxiety according to the Spielberg-Hanin method, it was found that the factor is present in all 556 studied students, 47 of them have a low level of personal anxiety (PA), which is 8.49% ± 1.18%, 234 people have an average the level of PA,

Table I. Number of respondents in higher educational institutions

Nº	Respondents	Quantity	Quantity
1.	Bogomolets National Medical University	228	41,01%
2.	National Taras Shevchenko University of Kyiv	328	58,99%
3.	Total number	556	100,00%
4.	Interviewed by the whole method of questioning	610	
5.	Unanswers	54	

Table II. Indicators of personal anxiety

Personal anxiety	High level		Intermediate level		Low	
	Quantity	%	Quantity	%	Quantity	%
Bogomolets National Medical University	152	66,67% ±3,12%	64	28,07% ±2,98%	12	5,26% ±1,48%
National Taras Shevchenko University of Kyiv	123	37,5% ±2,67%	170	51,83% ±2,76%	35	10,67% ±1,7%
Total number	275	49,46% ±2.12%	234	42,09% ±2.09%	47	8,49% ±1.18%

Table III. Indicators (intensive and extensive)

Students	Intensive indicator (number of cases per 100 students)	Extensive indicator, %
Bogomolets National Medical University	66.667	47.649
KNU them. T.G. Shevchenko	17.105	12.226
Total	56.140	40.125

which is 42.09% ± 2.09%, and 275 students who have a high level of PA, which is 49.46% ± 2.12%.

The data are presented in Table II.

It was found that almost half of the respondents feel a significant influence of the factor that increases the probability of emotional burnout in the mentioned students. This can be seen in the presented diagram (Fig. 1).

A comprehensive study of the phenomenon of anxiety gives reason to assert its significant typological variability, therefore, when analyzing the obtained result, it should be remembered that the low level of PA, which was 8.49% ± 1.18% of the respondents, in some cases may indicate the displacement of experiences by consciousness and latent anxiety, which is an even more provoking factor for emotional burnout than high levels of anxiety. At the same time, according to a comparative analysis of the content of anxious experiences with different intensities of anxious states young people with a reduced level of anxiety are noted to have a preserved positive self-image and the preservation of their own «I» in the social environment.

When examining the dependence of the predictor development in respondents on external factors and comparing the obtained indicators of PA among students studying at different universities, it was established that the indicators of the prevalence of PA

differ significantly. Thus, among the students of the T. G. Shevchenko Kyiv National University, a high level of PA was present in 123 people, which is 37.5%, against 152 students – 66.67% at the O.O. Bogomolets National Medical University, the average level of PA was found in 170 students – 51.83% of T. G. Shevchenko Kyiv National University against 64 students – 28.07% of O. O. Bogomolets National Medical University, and a low level of PA was found in 35 students – 10.67% of T.G. Shevchenko Kyiv National University. At the same time, among the students of the O.O. Bogomolets National Medical University, 12 people with a low level of PA were found, which amounted to 5.26%. The data are presented in diagrams (Fig. 3 and Fig. 4).

Having analyzed indicators of the level of PA among students of two universities, we found that the share of high anxiety levels among medical students is 1.8 times higher (by 29.17%) than among students of T. G. Shevchenko KNU. Also, in the medical university, there is 2.03 times (by 5.41%) smaller share of low level of PA.

An intensive indicator was calculated to characterize the frequency, level, and spread of anxiety among students.

To study specific gravity, structure, and distribution, an extensive indicator of personal characteristics was calculated.

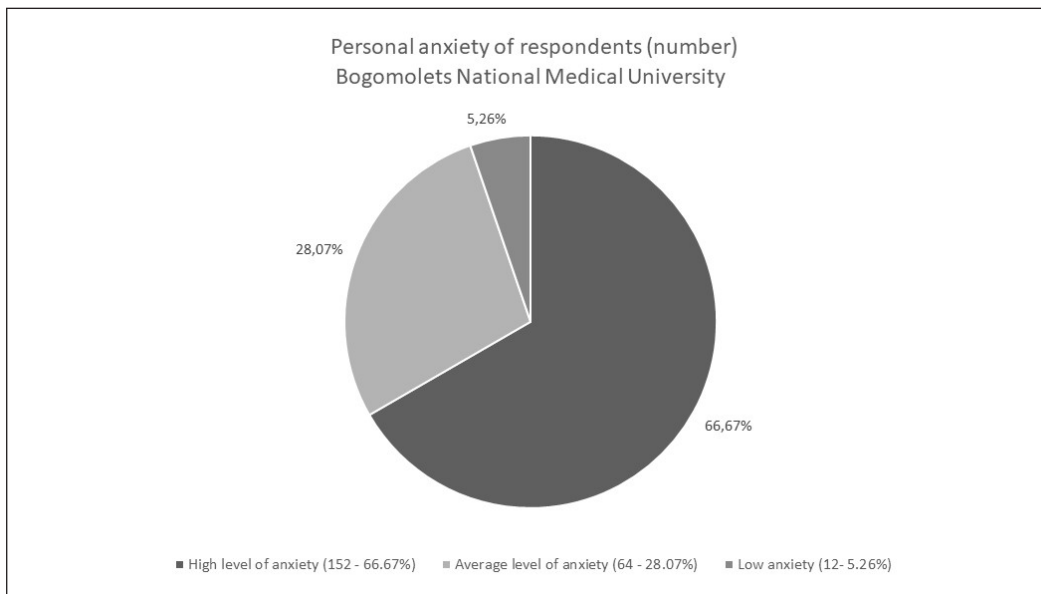


Fig. 3. Personal anxiety of respondents (number), National Taras Shevchenko University of Kyiv

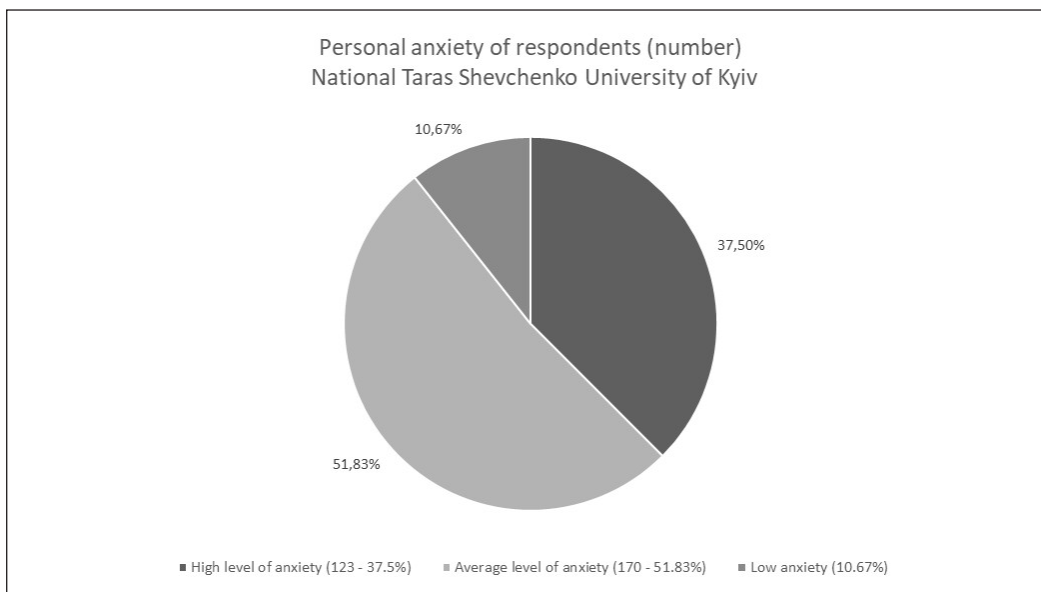


Fig. 4. Personal anxiety of respondents (number), Bogomolets National Medical University

According to the calculation data, it can be seen that among the students of O. O. Bogomolets NMU, personal anxiety occurs more often than among students of T. G. Shevchenko KNU.

DISCUSSION

According to V.V. Boyko [17], the emotional burnout syndrome includes three phases: stress, resistance, and exhaustion. Each phase includes 4 symptoms. The "tension" phase – nervous (anxious tension) is a harbinger and "trigger" mechanism in the formation of emotional burnout. So, according to the obtained data, we can assume that half of the respondents are in the first phase of emotional burnout or have already passed it. This determines the need for preventive and explanatory work with students, among whom a survey

was conducted to prevent the occurrence of emotional and, subsequently, professional burnout.

The obtained results proved that the influence of the internal factor – personal anxiety on personality among students is quite widespread. A higher prevalence and intensity of PA manifestation among medical students than among students of T. G. Shevchenko KNU. Therefore, it is possible to assume the opinion that medical students are more prone to emotional burnout under the influence of the mentioned factor.

Studying the phenomenon of anxiety among students, we considered it as subjective discomfort of the individual, which harms the interaction of the individual with others and the attitude towards oneself. This was due to the research of Y. Zajcev and A. Hvan [18], who emphasize the importance of considering anxiety in the context of the analysis of neoplasms and age crises, and

A. Gormin, who believes that an individual at a young age tends to partially return to an already experienced crisis and, in some cases, experiences it again [1], which, in our opinion, has a destabilizing character for the psychological health of the individual and can act as a predictor for the development of emotional burnout.

CONCLUSIONS

Our empirical research proves the presence and significant prevalence of the factor – anxiety, which has negative signs on the student environment. According to scientific data, the mentioned negative factor, especially at a high and medium level, can be a predictor of EBS among students.

Manifestations of emotional burnout syndrome in students include decreased motivation to study, dissatisfaction with the learning process, conflicts with colleagues and teachers, chronic fatigue, exhaustion, nervousness, unreasonable excitement, boredom, longing, irritability, and distancing from colleagues and relatives. The mentioned symptoms in patients do not appear at the same time and do not appear with the

same force, there are always individual manifestations and variations because EBS is a reaction of an individual personality. The selected method, which was used to detect the level of anxiety among students, allowed us to establish that medical students studying at the O.O. Bogomolets National Medical University feel the influence of a negative internal factor more than students studying at T.G. Shevchenko Kyiv National University. The reason for such a significant effect has not been established. Since it is known that nervous (anxious) stress is created by a chronic psycho-emotional atmosphere, a destabilizing environment, increased responsibility, and the complexity of the contingent, there is a need to study external factors that influence the development of the predictor in students of higher educational institutions.

Features of the possible manifestation and prevalence of internal risk factors of EBS are the basis of unhealthy behavior among student youth and indicate the need for a comprehensive approach to its prevention, timely detection, and the need for the development and application of modern adequate methods, forms and methods of prevention.

REFERENCES

1. Gruzeva TS. Biostatistics: textbook. Vinnytsia: Nova Kniga. 2020, p.384.
2. Vodopyanova NE, Starchenkova ES. Sindrom vygoraniya: diagnostika i profilaktika [Burnout syndrome: diagnosis and prevention]. Moskva: Urayt. 2017, p.343 (In Russian).
3. Maslach C, Leiter MP. Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry*. 2016; 15(2): 103-111. doi: 10.1002/wps.20311.
4. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annual review of psychology*. 2001; 52 (1): 397-422. doi: 10.1146/annurev.psych.52.1.397.
5. Dyrbye LN, Massie FS, Eacker A et al. Relationship between burnout and professional conduct and attitudes among US medical students. *JAMA*. 2010; 304(11): 1173-1180. doi:10.1001/jama.2010.1318.
6. Rotenstein LS, Torre M, Ramos MA et al. Prevalence of burnout among physicians: a systematic review. *JAMA*. 2018; 320 (11): 1131-1150. doi:10.1001/jama.2018.12777.
7. Vashaka T, Tukayev S, Palamar B et al. The Alexithymia correlation between individual-typological properties, emotional sphere and mental states of personality. *Clinical and preventive medicine*. 2019; 4 (9-10). doi: 10.31612/2616-4868.4(10).2019.04.
8. Tukaiev SV, Vasheka TV, Zyma IG. Psychological and neurophysiological aspects of the emotional burnout development. Actual aspects of internal medicine. Collective scientific monograph. Novosibirsk: Publishing House. «SibAK». doi: 10.13140/RG.2.1.2429.3845.
9. Tukaev SV, Dolgova EN, Vasheka TV et al. Individual'no-psihologicheskie harakteristiki uchashchejsya molodezhi, zanimayushchejsya raznymi vidami sporta [Individual and psychological characteristics of students engaged in different sports]. *Sportyvna medytsyna i fizychna reabilitatsiia*, 2017; 1: 64-71.
10. Reis D, Xanthopoulou D, Tsousis I. Measuring job and academic burnout with the Oldenburg Burnout Inventory (OLBI): Factorial invariance across samples and countries. *Burnout Research*. 2015; 2(1): 8-18. doi: 10.1016/j.burn.2014.11.001.
11. Draga TM, Myalyuk SP, Krynytska IYa. Osoblyvosti syndromu emotsiinoho vyhorannia u medychnykh pratsivnykiv [Features of emotional burnout syndrome in medical workers]. *Medsestrynstvo*. 2017 p. 3. (in Ukrainian).
12. Andrushko JS. The genesis of personality anxiety as a leading emotional component. A question of psychology. *Bulletin of the National Defense University of Ukraine*. 2020; 1 (54).
13. Costa PTJr, McCrae RR. Professional Manual. *Psychological Assessment Resources*. Florida. 1992, p. 237-260.
14. Izard KE. *Psikhologiya emotsii [Psychology of emotions]*. S-Peterburg: Piter. 2012, p.464. (in Russian).
15. Spielberger Ch. *Trevoga i trevozhnost' [Anxiety and anxiety] khrestomatiya: uchebnoe posobie*. S-Peterburg: Per Se. 2008, p.240. (in Russian).

16. Goulman D. Emotsiyni intelekt [Emotional intelligence]. Kyiv: Vivat. 2019, p.512. (in Ukrainian).
17. Boyko VV. Psihoenergetik [Psychoenergetics]. S-Peterburg: Piter. 2008, p.409. (in Russian).
18. Zajcev YA. Trevozhnost' v podrostkovom i rannem junosheskom vozrastah: diagnostika, profilaktika, korekciya [Anxiety in adolescence and youth: diagnosis, prevention, correction] M.: KGPA. 2006, 1p.12. (in Russian).

ORCID and contributionship:

Borys Palamar: 0000-0003-2510-0713^{A-F}

Svitlana Palamar: 0000-0001-6123-241X^{A,B,D-F}

Tetiana Miyer: 0000-0002-2874-2925^{A,E,F}

Victoria Zhelanova: 0000-0001-9467-1080^{E,F}

Sergey Tukaiev: 0000-0002-6342-1879^{A,B}

Hennadii Bondarenko: 0000-0001-5978-5138^{A,E,F}

Natalya Holota: 0000-0003-3748-753X^{A-D}

Conflict of interest:

The Authors declare no conflict of interest.

CORRESPONDING AUTHOR

Borys Palamar

Bogomolets National Medical University

13 Taras Shevchenko Blvd, 01601 Kyiv, Ukraine

e-mail: palamar.bi@ukr.net

Received: 01.06.2022

Accepted: 18.01.2023

A – Work concept and design, **B** – Data collection and analysis, **C** – Responsibility for statistical analysis, **D** – Writing the article, **E** – Critical review, **F** – Final approval of the article

 Article published on-line and available in open access are published under Creative Common Attribution-Non Commercial-No Derivatives 4.0 International (CC BY-NC-ND 4.0)