

**Serikova K.D.<sup>1</sup>, Mynbayeva A.K.<sup>2</sup>**

<sup>1</sup>“Pedagogy and psychology” specialty 2 year master student, Al-Farabi Kazakh national university, Kazakhstan, Almaty, e-mail: serikova.kamilya@mail.ru

<sup>2</sup> doctor of pedagogical sciences, professor of the department of pedagogy and educational management, Al-Farabi Kazakh National University, Kazakhstan, Almaty, e-mail: aigerim.mynbaeva@kaznu.kz

**DIAGNOSTICS OF STRESS AND DEVELOPMENT OF STUDENTS’  
STRESS RESISTANCE BY CREATIVE METHODS**

The article deals with the actual problem of the XXI century – stress prevention and the development of students’ stress tolerance. The main provisions of the theories G. Selye, R. Lazarus, A. Antonovsky, as well as the concept of the study “stress prevention technology”, “technology of stress tolerance development” are considered. Based on the study of theory and practice, we have identified the conditions and principles of stress prevention and stress resistance development, developed a training program. Selected diagnostic tools. A diagnostic study was conducted, in which 54 students of the Al-Farabi KazNU and Abai KazNPU took part. As a diagnostic method, we chose the PSM-25 Scale of Psychological Stress (Lemur-Tesier-Fillion), the Coping Behavior in Stressful Situations (CBS) questionnaire (Kryukova), “Comprehensive assessment of stress manifestations” method (Y. Scherbatykh). It was established that according to the results of the PSM Questionnaire, 37% of students have a low level of stress, 39% have an average level and 24% of students have a high level of stress. Next, we determined a comprehensive assessment of the manifestations of students’ stress using the method of Yu. Scherbatykh. Thus, 9% of respondents have a low level of stress, 13% have a moderate level, 33% have an average level, 20% have a higher level than an average, 25% have a high level of stress.

**Key words:** stress, stress tolerance, coping behavior, creative methods, students.

Серикова К.Д.<sup>1</sup>, Мынбаева А.К.<sup>2</sup>

<sup>1</sup>«педагогика және психология» мамандығының 2 курс студенті, әл-Фараби атындағы Қазақ ұлттық университеті, Қазақстан, Алматы қ., e-mail: serikova.kamilya@mail.ru  
<sup>2</sup> педагогика ғылымдарының докторы, педагогика және білім беру менеджменті кафедрасының профессоры, әл-Фараби атындағы Қазақ ұлттық университеті, Қазақстан, Алматы қ., e-mail: aigerim.mynbaeva@kaznu.kz

**Студенттердің күйзелісін және күйзеліске тұрақтылығын дамытуды креативті әдістер арқылы диагностикалау**

Мақалада ХХІ ғасырдың өзекті мәселесі – студенттердің күйзелісі және күйзеліске тұрақтылығын дамыту қарастырылады. Г. Селье, Р. Лазарус, А. Антоновский және басқалардың тұрақтылық теорияларының негізгі ережелері, сонымен қатар «күйзелістің алдын алу технологиясы», «күйзеліске тұрақтылықты дамыту технологиясы» баяндалады. Теория мен практиканы зерттеу негізінде біз күйзелістің алдын алу және күйзеліске тұрақтылықты дамытудың шарттары мен ұстанымдарын бөліп көрсеттік, тренингтік бағдарлама құрастырдық.

Диагностикалық құралдар таңдап алынды. Әл-Фараби атындағы ҚазҰУ және Абай атындағы ҚазҰПУ 54 студенті қатысқан диагностикалық зерттеу жүргізілді. Диагностикалау әдісі ретінде: Лемур-Тесье-Филлионның «PSM-25 психологиялық күйзеліс шкаласы», Т. Крюкованың (КЖКМҚ) «Күйзелістік жағдайлардағы копинг-мінез-құлық» сауалнамасы, (Ю. Щербатых) «Күйзелістің байқалуын кешенді бағалау» әдістемесі таңдап алынды. «PSM» сауалнамасының нәтижелері бойынша студенттердің 37%-інде күйзелістің төменгі деңгейі, 39% – орташа деңгейі және 24% – жоғары деңгейі бар екендігі анықталды. Содан соң, біз Ю.В. Щербатыхтың әдістемесі көмегімен студенттердің бойында күйзелістің байқалуын кешенді бағалауды анықтадық. Диагностикаға сәйкес, күйзелістің төменгі деңгейімен сұралған респонденттердің – 9%, қалыпты жағдайда –

13%, орташа деңгейде – 33%, орташадан жоғары деңгейде – 20% және күйзелістің 25% жоғары деңгейі бар студенттер болды.

**Түйін сөздер:** күйзеліс, күйзеліске тұрақтылық, копинг-мінез-құлық, креативті әдістер, студенттер.

Серикова К.Д.<sup>1</sup>, Мынбаева А.К.<sup>2</sup>

<sup>1</sup>магистрант 2 курса специальности «Педагогика и психология», Казахский национальный университет им. аль-Фараби, Казахстан, г. Алматы, e-mail: serikova.kamilya@mail.ru

<sup>2</sup>доктор педагогических наук, профессор кафедры педагогики и образовательного менеджмента, Казахский национальный университет имени аль-Фараби, Казахстан, г. Алматы, e-mail: aigerim.mynbaeva@kaznu.kz

### **Диагностика стресса и развитие стрессоустойчивости студентов креативными методами**

В статье рассматривается актуальная проблема XXI века – профилактика стресса и развитие стрессоустойчивости студентов. Рассмотрены основные положения теорий Г. Селье, Р. Лазаруса, А. Антоновского, а также понятия исследования «технология профилактики стресса», «технология развития стрессоустойчивости». На основе изучения теории и практики нами были выделены условия и принципы профилактики стресса и развития стрессоустойчивости, разработана тренинговая программа. Выбран диагностический инструментарий. Проведено диагностическое исследование, в котором приняло участие 54 студента КазНУ имени аль-Фараби и КазНПУ имени Абая. В качестве методов диагностики были выбраны: методика «Шкала психологического стресса PSM-25» Лемура-Тесье-Филлиона, опросник «Копинг-поведение в стрессовых ситуациях» (КПСС) Т.Крюковой, методика «Комплексная оценка проявлений стресса» (Ю.Щербатых). Установлено, что согласно результатам опросника «PSM» низким уровнем стресса обладает 37% студентов, средним уровнем – 39% и высоким уровнем стресса – 24% студентов. Далее мы определили комплексную оценку проявлений стресса студентов с помощью методики Ю.В. Щербатых. Согласно диагностике, низким уровнем стресса обладают 9% респондентов, умеренным – 13%, средним уровнем – 33%, уровень выше среднего имеют 20% студентов, высоким уровнем стресса обладают 25% опрошенных.

**Ключевые слова:** стресс, стрессоустойчивость, копинг-поведение, креативные методы, студенты.

### **Introduction**

The problem of stress prevention and stress tolerance development attracts the attention of scientists all over the world, since it is connected with the issues of health protection of citizens, the development of their potential and resistance to global changes in all spheres of life. The need to prepare a new generation for coping with stress is noted in many educational documents, in particular, in the forecast of the development of competencies of students in OECD-2030. Therefore, our research is aimed at designing technologies and programs for the prevention of stress and the development of stress tolerance for future professionals. This is due to the development of the most effective, innovative methods, forms and means of diagnosis, training and education. An untrained person finds it difficult to experience any sudden changes, and this state is under stress. In this regard, there is a need for hard work and education in stress resistance in young people, as well as in carrying out activities for the prevention of stress. The purpose of the study is the diagnosis of stress and the development of a program for

the prevention of stress and the development of students' stress tolerance.

Research on the nature of stress and stress tolerance was done by foreign scientists: K. Jaspers (Jaspers 2009: 877), V.I. Petrushin (Petrushin, 2006: 368), A.P. Katunin (Katunin, 2012). In Kazakhstan, the study of stress tolerance is a young and developing field, its research is carried out by E.I. Barabanova, B.K. Zhumagaliyeva (Barabanova, Zhumagaliyeva, 2014), etc.

Drawing attention to the development of innovative methods for the prevention of stress and the development of stress tolerance, one of the most effective and environmentally friendly methods are creative methods. The study of creativity in Kazakhstan is engaged in, BA Ospanova (Ospanova, 2006: 288), K.M. Nagymzhanova (Nagymzhanova, 2010: 345), A.S. Amirova (Amirova, 2009: 45) and others.

Thus, this problem requires special attention in designing stress prevention technology and stress tolerance technology, identifying youth exposure levels to stress sources and their resistance to unexpected changes, as well as developing new methods to develop stress tolerance and stress prevention.

### Literature review

If we consider the process of pathogenesis in the theory of G. Selye, then we can see that the nature of stress does not depend on the physiological response to stress. He also believes that the response of the body acts as a universal model of the defensive response, responsible for protecting the person and his body, preserving integrity. In general, the protective reaction goes through three stages and is an adaptation syndrome. A strong protective reaction of the body with a long time goes into a stage of stress. Three stages of stress development G. Selye compares with 3 stages of a person's life: childhood (with low resistance to environmental factors, anxiety), maturity (adaptation of a person to all external factors, increase in resistance), old age (loss of resistance, depletion of the body, fatigue) (Selye, 2012: 66).

At the heart of his theory, R. Lazarus considers the role of a subjective cognitive assessment of the potential threat, adverse impact, as well as the ability and ability of an individual to overcome stress. By threat, the author understands the undesirable negative influence of external and internal conditions. These conditions vary in intensity of exposure, degree of uncertainty of the source of stress, time of exposure, and individual resources for coping with stress.

When considering the evaluation of stress, he identifies three types of assessments:

- the initial assessment makes it clear whether the situation of a person is disturbed and if yes then how strong;
- secondary assessment allows to assess the requirements of the situation and the ability to overcome stress;
- Tertiary assessment helps to rationally assess the situation and choose the necessary method to respond to stress. Stress can change its negative nature, if you change the attitude towards it.

When assessing stress, it is important not to overestimate the significance of the event. Thus, we can conclude that the same source of stress affects a person differently, it all depends on the cognitive assessment of the situation. Typically, stressful situations arise if a person feels an interest in activities, high motivation, responsibility, and in the case when he assessed all the requirements, and they exceed his resources. In this case, stress reflects the level of dynamism in the life of an individual, since a person always strives to change something, to get something out of reach.

The theory of R. Lazarus pays great attention to the process of perception, assessment of the

situation, but leaves aside the problem of coping with stress, developing strategies and methods for confronting stress, and also does not define the role of the individual and personal resources of a person. After all, psychological stress is further developed when there is a delay or lack of a resource to combat it (Lazarus, 2000)

The theory of salutogenesis is one of the central in Germany for the study of stress and health psychology. The main question that is covered in this theory is how a person, experiencing a thousand sources of stress throughout his life, remains a somatically and psychologically healthy person. A group of researchers led by A. Antonovskiy conducted a lot of research, including the behavior of people who survived in the camps during the Second World War. It was found that many people from the camps were well adapted to livelihoods.

On the basis of the obtained results, A. Antonovskiy identifies a number of factors that help to cope with the severe effects of stress.:

- psychological factors (optimism, tolerance, internal balance, interpersonal skills, internal locus-control, creativity and intelligence);
- social factors (social environment, interpersonal communication, interaction with other people, cooperation);
- physical factors (environmental conditions).

A. Antonovskiy notes that people with a high level of a connectedness sense often avoid unpleasant situations that can potentially threaten their health, and vice versa are included in health-saving activities. The sense of connectedness affects the level of cognitive assessment of stress situations. People with a low sense of connectedness will regard any ambiguous situations as threatening, stressful, negative. People with a high sense of connectedness regard situations as challenges and will be actively involved in exploring new ways to solve these challenges. They will be easier to make contact and perceive useful information necessary to overcome stress. The feeling of connectedness is formed throughout life, especially actively in its first decades, but its level may change under the influence of various factors (Antonovskiy, 2006).

Thus, this theory of stress tolerance allows us to conclude that when the whole body is stressed on external influences, new adaptive human responses are revealed.

### Methodology and research methods

We believe that the effectiveness of the process of developing students 'stress tolerance in a higher educational institution will increase if we develop

(1) the theoretical foundations of stress prevention and stress tolerance technologies using creative methods, (2) a model for preventing stress and developing students' stress tolerance, and (3) conducting pedagogical work on their development, since the essence of stress prevention technologies and stress tolerance development will be revealed, a scientific approach will be used, a training program will be developed and their basis, statistically verified results of experimental pedagogical research.

The study involved 54 students of the Kazakh National University named after al-Farabi and the Kazakh National Pedagogical University named after Abay. In the diagnosis, the methods of the PSM-25 psychological stress scale by Lemur-Tesier-Fillion, the coping behavior in stressful situations (KPSS) Kryukova T.L. (Bolotova, 2018), the method of "Comprehensive assessment of stress manifestations" (Scherbatykh Yu.V.)

### Definition of concepts

Based on the analysis of the concepts, we formulated such key definitions as "stress prevention technology" and "stress tolerance technology".

*The technology of stress prevention* is an ordered set of actions, operations and procedures aimed at preventing the state of mental stress that

occurs in a person in the course of activity in the most difficult and difficult conditions, both in everyday life and under special circumstances. *The technology of developing stress tolerance* is an ordered set of actions, operations and procedures for the development of a systemic personality trait, ensuring successful adaptation of an individual to the effects of external loads and negative factors without consequences for a person's physical and mental health.

### Stress Prevention and Resilience Development Program

Prevention of stress and the development of stress by creative methods are possible with the implementation of the programs developed by us. The first program is devoted to stress prevention using creative methods and includes 6 training sessions on three levels of prevention. The second program is aimed at the development of stress resistance by creative methods (table). In our opinion, it is creative methods that are effective in dealing with stress, because they are accessible to everyone, they are environmentally friendly, they allow you to quickly resolve a problem situation, to find several alternative and innovative solutions in a short time.

**Table** – Stress Prevention and Stress Resilience Programs

The first stress prevention program using creative methods		The program for the development of stress resistance creative methods
<b>Primary prevention</b>	Training lesson 1 «What is stress?». Diagnosis of the level of exposure to stress. Training lesson 2 «The first signs of stress»	Training session 1 «The essence of stress resistance. Determining the level of stress resistance « Training lesson 2 «Stress resistance techniques and secrets»
<b>Secondary prevention</b>	Training lesson 3 «Solving problem situations using the Six Hats method. Training Session 4 «10 Ways to Prevent Stress».	Training lesson 3 «Brainstorming as a way to build stress tolerance» Training lesson 4 «Development of stress tolerance through associative search»
<b>Tertiary prevention</b>	Training Session 5 «Creative visualization of inner experiences». Training lesson 6 «Diagnostics of the level of exposure to stress»	Training Session 5 «Insight – a creative step to stress resistance»

The program of training sessions was compiled in accordance with the age, psycho-physiological and individual-personal characteristics of students. We chose a training form of training, because the training helps to develop personal and professional qualities of an individual, and also contributes to group interaction and the adoption of positive experience.

### Conditions and principles of stress prevention and stress tolerance development

A psychological-pedagogical study on the use of creative methods for the development of the stress-resistance of schoolchildren was previously conducted (Serikova, 2018). We also defined the conditions for the prevention of stress and the development of stress tolerance:

– **activating internal resources** involves self-analysis, self-reflection, the search for their positive, internal and potential capabilities, abilities that can be used in coping with stress and the development of the personality's stress tolerance;

– **acceptance and support** involves accepting any creative ideas of the individual and their support. Only with the help of support and unconditional acceptance it is possible to build trusting relationships and help unlock the potential of the individual (Galagher, 1990);

– **accounting of individual features** it will help to deeply understand the problems and sources of stress for each person, as well as more effectively resolve any issues and develop resistance to stress;

– **continuity** of the methods and forms used is aimed at the correct combination and comprehension of methods and forms of work. The quality of the result depends on this combination;

– **motivation on using creative methods** is the formation of the initial motivation of students to use creative methods in situations of stress. In the event of a motivation, students' activities will be carried out consciously and with interest;

– **encouragement and positive reinforcement** will allow students to relax in search of new creative ideas;

We have highlighted the principles of stress prevention and stress resistance development by creative methods:

– **the principle of health preservation.** This principle reveals the importance of maintaining health and a careful attitude towards it at all stages of the socialization of the individual. With a healthy attitude towards the individual, proper protection from sources of stress is possible;

– **principle of resource mobilization.** When resisting stress and developing stress tolerance, maximum mobilization of internal human resources is necessary. This principle will allow you to use all the necessary arsenal and quickly deal with a potential source of stress;

– **principle of activation of creative resources.** Creative resources of a person make it possible to cope with stressful situations ambiguously, quickly and without loss. Such resources do not require much effort and are "environmentally friendly";

– **principle of activity.** This principle implies certain actions of the student that must

be performed to develop stress tolerance or to counter stress;

– **the principle of humanization.** The main value and center of the programs being implemented is the individual, therefore all methods, methods and forms of work organization must be harmless, not violate human rights and stimulate the development of the individual;

– **the principle of awareness.** Before you fight any ailment or develop a certain quality, you need to understand and know what you have to deal with. This principle allows a person to become aware of the problem of stress and helps to choose the right, conscious ways of dealing with him, it is also consciously necessary to develop stress tolerance (Carver, 2005);

– **the principle of consistency.** Preventive work, as well as the development of stress tolerance, is based on the systemic interaction of various sciences, institutions of socialization, which allows you to look at the problem from all sides and in conjunction with other elements of the system.

#### **Diagnostics of stress levels and stress tolerance of students**

As a diagnostic method, we chose the Lemur-Tesier-Fillion PSM-25 Psychological Stress Scale Methodology, the Coping-Under-Stressful Situations Questionnaire (CPSU) Kryukova T.L. (Bolotova, 2018), the method of "Comprehensive assessment of stress manifestations" (Shcherbatykh Yu.V.) (Scherbatykh, 2006: 256). The experiment was attended by students of the Al-Farabi Kazakh National University specialties "Social Pedagogy", "Pedagogy and Psychology", "Political Science", "Geography" and students of the Kazakh National Pedagogical University named after Abai of "Biology" specialty. In total 54 students participated in the diagnosis of stress levels and stress tolerance.

According to the results of the PSM Questionnaire, 37% of students have a low level of stress, an average level of 39% and a high level of stress of 24% of students (Figure 1).

Next, we determined a comprehensive assessment of the manifestations of students' stress using the method of Yu.V. Scherbatykh, thus, 9% of respondents have a low level of stress, 13% moderate, an average of 33%, 20% of students have a higher level, 25% of respondents have a high level of stress (Figure 2).

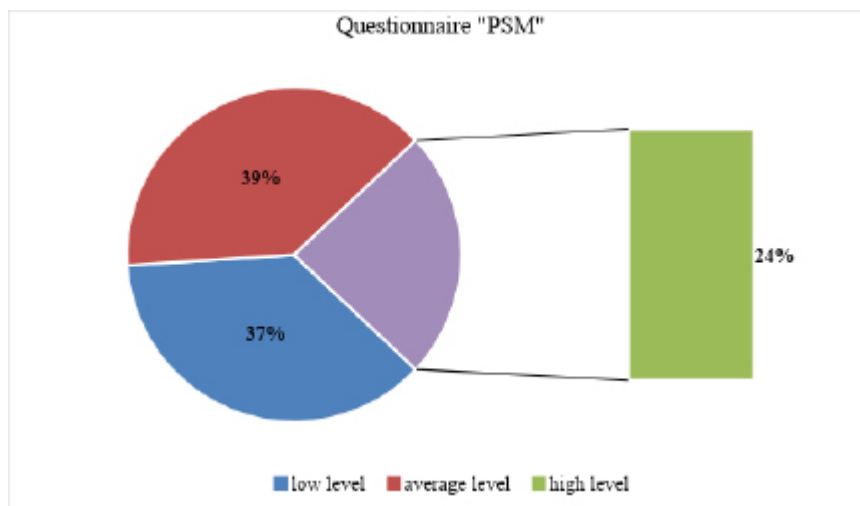


Figure 1 – results of stress level diagnostics (Questionnaire «PSM»)

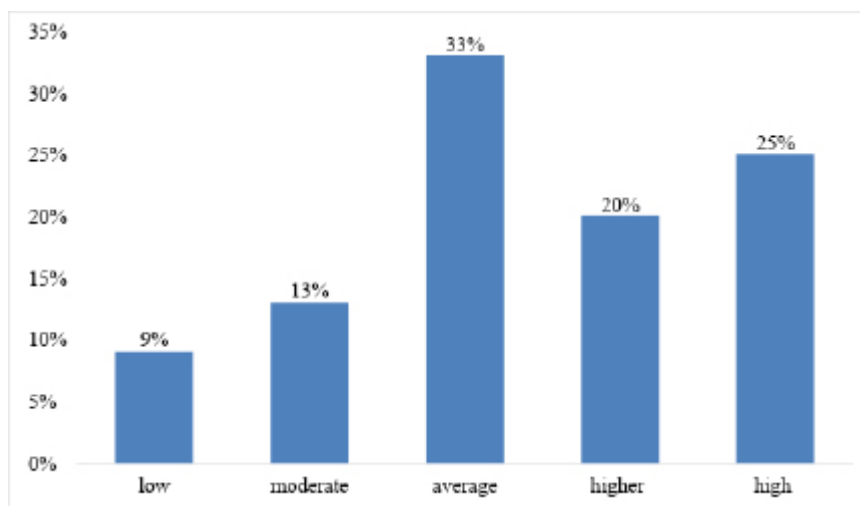


Figure 2 – results of stress level diagnostics (CBSS Yu.V. Scherbatykh)

Two people react to the same source of stress differently, each using his inherent coping behavior. According to the questionnaire “Coping behavior in stressful situations” T.L. Krukova, among our respondents in stressful situations, 44% use avoidance-oriented coping — such people are not used to solve problems on their own, they avoid conflict situations in every way and rarely defend their point of view, their rights; emotion-oriented coping is inherent in 20% of respondents – under stressful situations, people lend themselves to their emotions and are guided by them, can make decisions in a spur of the moment; 36% of students have problem-oriented coping – such people like to reason, rationalize a

situation, find a constructive solution and a way out of a situation. This coping is most favorable in stressful situations and helps to find the right solution without harm to the mental, physiological state of a person (Figure 3).

Based on the results of the diagnostic phase of the study, you can see that among the students participating in the study, the majority experience an average level of stress (PSM questionnaire – 39%, CBS (Coping behavior in stressful situations)– 33%), and 24% of students have a high level of stress according to the PSM questionnaire “And” CBS “– 25%. Respondents in stressful situations prefer coping, oriented to avoidance – 44% and coping, oriented to solving problems – 36%.

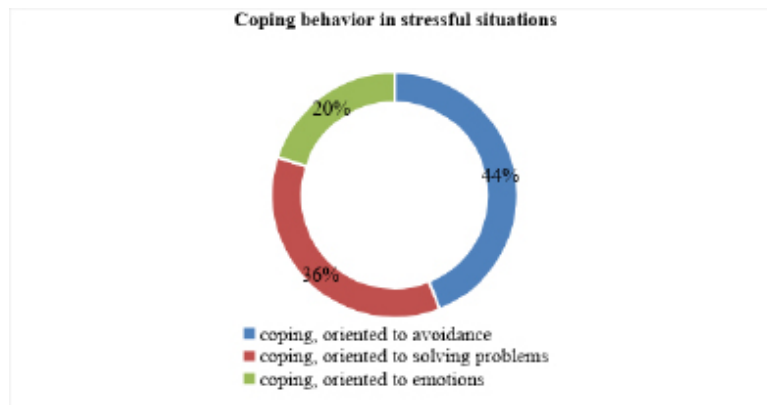


Figure 3 – results of CBS

## Conclusion

Thus, the prevention of stress and the development of stress tolerance is possible with the implementation of the training program, compliance with the conditions and principles, the planned implementation of which will allow

to achieve the desired result. In our opinion, it is creative methods that are effective in dealing with stress, because they are accessible to everyone, they are environmentally friendly, and they allow you to quickly resolve a problem situation, to find several alternative and innovative solutions in a short time.

## Литература

- Antonovsky, Aaron. *Unraveling The Mystery of Health. How People Manage Stress and Stay Well.* – San Francisco, Jossey-Bass Publishers. – 2006.
- Carver, C.S., Scheier M.F., Weintraub J.K. Assessing coping strategies: a theoretically based approach // *Journal of Personality and Social Psychology.* – 2005. – 549 p.
- Galagher D. Extraversion, neurotism and appraisal of stressful academic events // *Pers. and indiv. diff.* 1990. – Vol. 11. – N. 10. – P. 1053-1057.
- Барабанова Е.И., Жумагалиева Б.К. Психологические особенности профессионального стресса у госслужащих // *Вестник КазНУ. Серия психологии и социологии.* – 2014. – Т.49 – №2. – С.80-85.
- Болотова А.К., Молчанова О.Н. Психология развития и возрастная психология. – СПб: Питер, 2018. – С. 478-483.
- Әмірова Ә.С. Бастауыш сынып оқушыларының шығармашылық іс- әрекетін қалыптастырудың теориясы мен практикасы: пед.ғыл.канд. ... автореф.-Алматы, 2009. – 45б.
- Катунин А.П. Стрессоустойчивость как психологический феномен // *Молодой ученый.* – 2012. – №9. – С. 243-246
- Лазарус Р. Теория стресса и психофизиологические исследования / в кн.: Эмоциональный стресс. – Л.: Медицина, 2000.
- Нагымжанова К.М. Университет студенттерінің педагогикалық креативтілігін инновациялық білім беру ортасында қалыптастырудың ғылыми негіздері: пед. ғыл. док. ... дис.: 13.00.01. – Алматы, 2010. – 345 б.
- Оспанова Б.А. Педагогические основы формирования креативности будущих специалистов в системе университетского образования: дис.д.п.н. – Туркестан, 2006. – 288 с.
- Петрушин В.И. Неврозы большого города – М.: Говорящая книга, 2004. – 368с.
- Селье Г. Стресс без дистресса. – М.: «Книга по требованию», 2012. – 66 с.
- Серикова К., Мынбаева А.К. Развитие креативности для повышения стрессоустойчивости школьников // *Вестник КазНУ. Серия педагогическая.* – 2018. – № 3 (56). – С. 45-57. <http://bulletin-pedagogic-sc.kaznu.kz/index.php/1-ped/article/view/521>
- Щербатых В.Ю. Психология стресса и методы коррекции. – СПб.: Питер, 2006. – 256 с.
- Ясперс К. Общая психопатология. – М.: Практика, 2009. – 877 с.

## References

- Amirova A.S. (2009) *Bastauysh synyp okushylarynyn shygarmashylyk is-areketin kalyptastyrudyn teoriyasy men praktikasy* [Theory and practice of formation of creative activity of primary school students]. *Almaty, 45 p.* (In Kazakh)
- Antonovsky A. (2006) *Unraveling The Mystery of Health. How People Manage Stress and Stay Well*, San Francisco, Jossey-Bass Publishers

Barabanova E.I., ZHumagalieva B.K. (2014) Psihologicheskie osobennosti professional'nogo stressa u gossluzhashchih [Psychological features of professional stress in civil servants]. Vestnik KazNU. Seriya psihologii i sociologii [Vestnik KazNU. The Journal of psychology and sociology], 9(2), pp. 80-85. (In Russian)

Bolotova A.K., Molchanova O.N. (2018) Psihologiya razvitiya i vozrastnaya psihologiya [Developmental psychology and age psychology]. Spb: Piter, pp. 478-483. (In Russian)

Carver, C.S., Scheier M.F., Weintraub J.K. (2005) Assessing coping strategies: a theoretically based approach. Journal of Personality and Social Psychology, 549 p.

Galagher D. (1990) Extraversion, neurotism and appraisal of stressful academic events. Pers. And Individ. Diff. Vol. 11 (10), p. 1053-1057.

Katunin A.P. (2012) Stressoustojchivost' kak psihologicheskij fenomen [Stress resistance as a psychological phenomenon]. Molodoi uchenyj [Young scientist], 9, pp. 243-246 (In Russian)

Lazarus R. (2000) Teoriya stressa i psihofiziologicheskie issledovaniya [The theory of stress and psychophysiological research]. Emocional'nyj stress [Emotional stress]. (In Russian)

Nagymzhanova K.M. (2010) Universitet studentterinyn pedagogikalyk kreativtiligin innovaciya lyk bilim beru ortasynda kalyptastyrudyn gylimi negizderi [Scientific bases of increase of pedagogical creativity of students in system of innovative education]. Almaty, 345 p. (In Kazakh)

Ospanova B.A. (2006) Pedagogicheskie osnovy formirovaniya kreativnosti budushchih specialistov v sisteme universitetskogo obrazovaniya: dis.d.p.n. [Pedagogical bases of formation of creativity of future specialists in the system of University education]. Turkestan, 288 p. (In Russian)

Petrushin V.I. (2004) Nevrozy bol'shogo goroda [The neuroses of a big city]. Moscow, Govoryashchaya kniga [Speaking book], 368 p. (In Russian)

Scherbatykh V.YU. (2006) Psihologiya stressa i metody korrekcii [Psychology of stress and methods of correction]. SPb.: Piter, 256 p. (In Russian)

Selye G. (2012) Stress bez distressa [Stress without distress]. Moscow, Kniga po trebovaniyu [Book on demand], 66 p. (In Russian)

Serikova K; Mynbayeva A.K. (2018) Razvitie kreativnosti dlya povysheniya stressoustojchivosti shkol'nikov [Development of creativity to improve the stress resistance of students]. Vestnik KazNU. Seriya pedagogicheskaya [Journal of Educational Sciences], v.56 (3), p. 45-57 (In Russian)

Yaspers K. (2009) Obshaya psihopatologiya [General psychopathology]. Moscow, Praktika [Practice], 877 p. (In Russian)