

icCSBs 2020**The Annual International Conference on Cognitive - Social, and Behavioural Sciences****CREATIVE AND ART TECHNIQUES IN STRESS PREVENTION FOR PROSPECTIVE TEACHERS**

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(KazGASA), Almaty, Kazakhstan***Abstract***

Stress prevention issues have been gaining momentum among the world's researchers, as they are associated with the issues of maintaining students' physical and mental well-being, and building resistance to stress in future specialists. What kinds of creative and art techniques may be used to prevent stress? How can stress resistance be built in prospective teachers, since teaching is a potentially stressful occupation? The purpose of the study is to develop a program for stress prevention and building resistance to stress for prospective teachers using creative and art techniques, and to pilot test the program at a university. Originally, an array of approaches to stress prevention and building resistance to stress have been summarized to develop a training program. 96 students majoring in pedagogy at Al-Farabi Kazakh National University and Abai Kazakh National Pedagogical University participated in the practical part of the study. The following instruments were used for measuring: the PSM-25 Psychological Stress Measure by Lemyr-Tessier-Fillion, the Coping Behavior in Stressful Situations (CBSS) technique by Kryukova, the Comprehensive Assessment of Stress Signs by Shcherbatykh. The program was comprised of two blocks: (1) stress prevention and (2) building resistance to stress by creative and art techniques. Each block included 6 training sessions which incorporated creative activities. As a result of pilot testing the program, a positive dynamics of stress-reduction indicators was recorded. Upon delivering the training program, low stress level was recorded in 52% students (initial 36%), average level in 43% (initial 38%) and high level in 5% students (initial 26%).

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1. Introduction

One of the most in-demand skills in the 21st century for professionals, irrespective of the industry they belong to, is one's stress resistance in the face of ongoing social and job-related changes. The ability to resist stress and apply preventive measures is of importance to prospective teachers, since stress can negatively affect both individual's well-being and his/her productivity at work. This demand is also relevant for teachers, considering that they actively interact with the younger generation, and, in fact, demonstrate significant patterns of behavior to schoolchildren. Moreover, in difficult life situations, they can become a role model of a positive social behavior. In addition, the new challenge faced by teachers is to need to teach students health saving technologies, psychohygiene, family and social relationships.

2. Problem Statement

Teaching has become a stressful occupation, as it is associated with intense human-human interactions, increasing workload on teachers in the context of the protracted reform processes in Kazakhstani education system, amid revised curricula, teaching methods, teaching techniques, and growing parental pressure.

A contemporary student also faces a variety of uncertain problems due to economic and social problems; therefore, the issues of students' adaptation to the contemporary realities, the development of effective behavioral strategies to overcome stressful situations, are of significance. The reasons behind stress may be a fast pace of life, academic load, concurrent workload for part-time students, conflicts with others, excessive information, city noise, bustle, and environmental problems (Bildanova, Biserova, & Shagivaleeva, 2015; Dolgova & Vasilenko, 2016). Thus, the issues of stress prevention and building resistance to stress in students as prospective teachers are related to maintaining teachers' and students' physical and mental well-being, their ability to self-regulate emotions, as well as lessening teacher and student workloads.

3. Research Questions

- 3.1. What kind of stress prevention experience exist as informed by existing research?
- 3.2. What diagnosing instruments for measuring stress can be applied?
- 3.3. How one can build prospective teachers' skills of stress prevention and stress resistance?
- 3.4. What creative and art techniques can be used in stress prevention at work?

4. Purpose of the Study

The purpose of the study is to develop a program for stress prevention and building resistance to stress for prospective teachers using creative and art techniques, and to pilot test the program at a university.

5. Research Methods

The research design is twofold: theoretical and practical. First, to develop a training program for students, theoretical approaches to stress prevention and building resistance to stress have been summarized. The theoretical underpinnings were organized and then incorporated into the training program. In the second part, 96 students majoring in pedagogy at Al-Farabi Kazakh National University and Abai Kazakh National Pedagogical University took part in the experiment. To measure stress the following instruments were used: the PSM-25 Psychological Stress Measure by Lemyr-Tessier-Fillion (Vodopyanova, 2018), the Coping Behavior in Stressful Situations (CBSS) technique by Kryukova (Bolotova & Molchanova, 2018), the Comprehensive Assessment of Stress Signs by Shcherbatykh (2006). Pilot testing of the program was conducted. Reliability of the findings was confirmed using statistical analysis of Student's t-test.

5.1. Literature review

5.1.1. Understanding key concepts

Selye (1994), Lazarus (2006), Antonovsky (2006) and others have made a great contribution to the development of stress theories. Stress, according to Selye (1994), is non-specific response of the body to any demand accompanied by the restructuring of the body's defense mechanisms; according to Lazarus (2006), stress is the process of activating a cognitive activity by which an individual appraises and interprets events as harmful, threatening, or challenging and compares the arising difficulties with his/her own ability to overcome them, according to Welford, stress is the result of a mismatch between human body capabilities and the demands imposed on it (as cited in Serebryakova, 2007). We will rely on Zinchenko's definition of stress as a state of mental tension that occurs in an individual in the process of his/her activity under the most difficult, challenging conditions, both in everyday life and under specific circumstances (as cited in Mesheryakova & Zinchenko, 2013).

Overall, nine definitions of stress resistance have been examined. The analysis shows that it is possible to distinguish between the three interpretations, (1) as an "an individual's psychological trait" (Bannikov, 2003) and "an individual's ability" (Mitina, 2018), (2) frequently used as a "complex trait, quality of individual's personality" (Lozgacheva, 2004; Velichkovsky, 2007), (3) as a 'psychophysiological state' (Lee Kang, 2005). As a working definition, we use Velichkovsky's (2007) definition of stress resistance as "a systemic personality trait that ensures the successful adaptation of an individual to the effects of external stress and negative factors without entailing negative consequences for his/her physical and mental well-being" (p.9).

Prevention is a set of measures that prevent deviations, diseases, or protect against something. According to Dubrovina (2004), any preventive activity has three levels. Primary prevention involves working with the entire audience and is aimed at raising public awareness of any phenomenon (10 out of 10 participants). Secondary prevention includes "risk group" participants who require a special approach. This prevention focuses on people most likely at risk of deviation, disease, addiction, etc. Tertiary prevention is a more complex prevention mode and implies working with addicted, sick people who need regular assistance from multiple field experts. In our opinion, *stress prevention* is a set of actions,

operations and procedures aimed at preventing a state of mental overstrain that occurs in an individual when operating under the most difficult, challenging conditions, both in everyday life and under specific circumstances

5.1.2. Stress theories and approaches to stress coping

Selye (1994) holds the view that stress is as a response of the body responsible for protecting a human and his/her body, by maintaining the integrity. In general, the defense reaction occurs in three stages and is referred to as an adaptation syndrome. A strong defensive reaction of the body develops into the stage of stress over a long period. Selye (1994) found three stages of stress development as analogous to the three stages of a man's life: childhood (with its low resistance to environmental factors, anxiety), adulthood (adaptation of an individual to all external factors, an increased level of resistance), old age (loss of resistance, body exhaustion, fatigue). Selye (1994) emphasized the importance of an individual's ability to understand and evaluate the positive and negative aspects of stress. While contributing to the manifestation of creative and effective labor activity, balancing the positive and negative aspects of stress plays a significant role in maintaining mental and physical well-being.

At the core of his *cognitive stress theory*, Lazarus views the role of subjective cognitive assessment of a potential *threat*, adverse impact, as well as individual's possibility and ability to overcome stress. He distinguished between the concepts of eustress and distress while paying attention to emotions and the intensity of emotional reactions. He believed that stressful events themselves rarely cause disorders, whereas they become threatening to one's body and life only when coupled with internal and external factors (Lazarus, 2006). Thus, Lazarus (2006) paid close attention to the process of perception, assessment of a situation, leaving aside the matters of how to manage stress, or develop strategies and techniques for resisting stress; he also left the role of the individual and personal resources of a person unattended. After all, any psychological stress progresses further, given a delay or lack of resources to manage it.

Antonovsky's theory of salutogenesis identifies a number of factors that help to cope with the adverse effects of stress (Antonovsky, 2006):

- psychological factors (optimism, tolerance, inner balance, sociability, internal locus of control, creativity and intelligence);
- social factors (social environment, interpersonal communication, interaction with others, cooperation);
- physical factors (environmental conditions).

Antonovsky (2006) notes that participants with a high level of integrity are more likely to avoid unpleasant situations that can potentially threaten their well-being, while engaging themselves in health-preserving activities.

Below is a summary of the effect of stress on the body according to Shemyakina (2012), in which behavioral, cognitive, physiological and emotional changes under stress are captured (table 01, figure 01).

For this article, let us briefly establish the four approaches to stress prevention informed by the related research: dispositional, situational, resource and COPE-approach (Gramling & Aulenbach, 2002).

Table 01. Forms of stress manifestation

Behavioral Stress Manifestation	Cognitive Stress Manifestation
<ul style="list-style-type: none"> • Hand Shake • Skin Redness • Itching • Disturbed Sleeping, Insomnia • Change In Speech, Voice Trembling • Slower Sensorimotor Reaction 	<ul style="list-style-type: none"> • Impaired Attention, Distraction • Memory Impairment • Disturbed Thought Processes • Dominant Right Hemisphere Over The Left Hemisphere
Physiological Stress Manifestation	Emotional Stress Manifestation
<ul style="list-style-type: none"> • Increased Heart Rate • High Blood Pressure • Shortness Of Breath, Chest Pain • Headache 	<ul style="list-style-type: none"> • Negative Mood • Prevalence Of Gloomy, Pessimistic Thoughts • Introversion, Self-Accusation, Suggestibility, Suspicion, Anxiety

As it is known, the process of overcoming difficult situations in an individual’s life is usually referred to as coping behavior. The key issue of the **dispositional approach** is to study coping behavior in stressful situations and to examine how it affects human health, the ability to successfully overcome stress, and psychological well-being. There are repressor, sensitizer, monitor and blunter coping styles. The **situational approach** (Monina & Rannala, 2009) considers stress as a process, while highlighting its specific features in relation to specific situations. Researchers in the field argue that any stressful situation has a developing nature, namely, first there is a cognitive assessment of the situation, followed by a reassessment of the situation, then coping style is selected, and new experience is emotionally processed.

Recently, a **resource-based approach** has gained momentum in stress prevention. The theory raises the issue of accumulating various resources and their subsequent allocation to stressful situations. Hobfall believes that it is the loss of resources that entails stressful reactions, given that the body is in a depleted state (as cited in Monina & Rannala, 2009).

The **COPE approach** is related to the Lazarus theory. As part of the COPE approach, the scholars have developed a stress management questionnaire, which was based on Lazarus’ theories of stress and on their unique behavioral self-regulation model. The COPE questionnaire is aimed at measuring both coping styles and situational reactions, in addition to that the questionnaire is capable of measuring the extent to which individuals under stress are prone to seek social support (Bodrov, 2001).

The literature showed the existence of several views on stress prevention levels. For example, Murphy, Gray, Sterling, Reeves, and DuCette (2009) operates with three levels in his works, while Williamson distinguishes four stages (Harkavi, 2006). According to Murphy et al. (2009):

- Primary prevention aims at reducing the impact of the stressor by removing sources of stress (such as changing jobs)
- Secondary prevention aims to address symptom relief through SMT (stress management training)
- Tertiary prevention is more of a therapy than prevention (p.331).

Harkavi (2006), highlighting the four planned stages of prevention, defines the basic operating techniques as follows:

- Primary prevention stage, where changes are introduced in the client’s environment;

- Secondary prevention stage involves the use of positive thinking, cognitive techniques for understanding and accepting the situation;
- Tertiary prevention stage helps an individual to cope with stressors through medication or during training with the participation of “difficult participants”;
- Quaternary prevention stage teaches participants to react to situations in a different way, with the help of various activities, while a new lifestyle is being acquired (Harkavi, 2006).

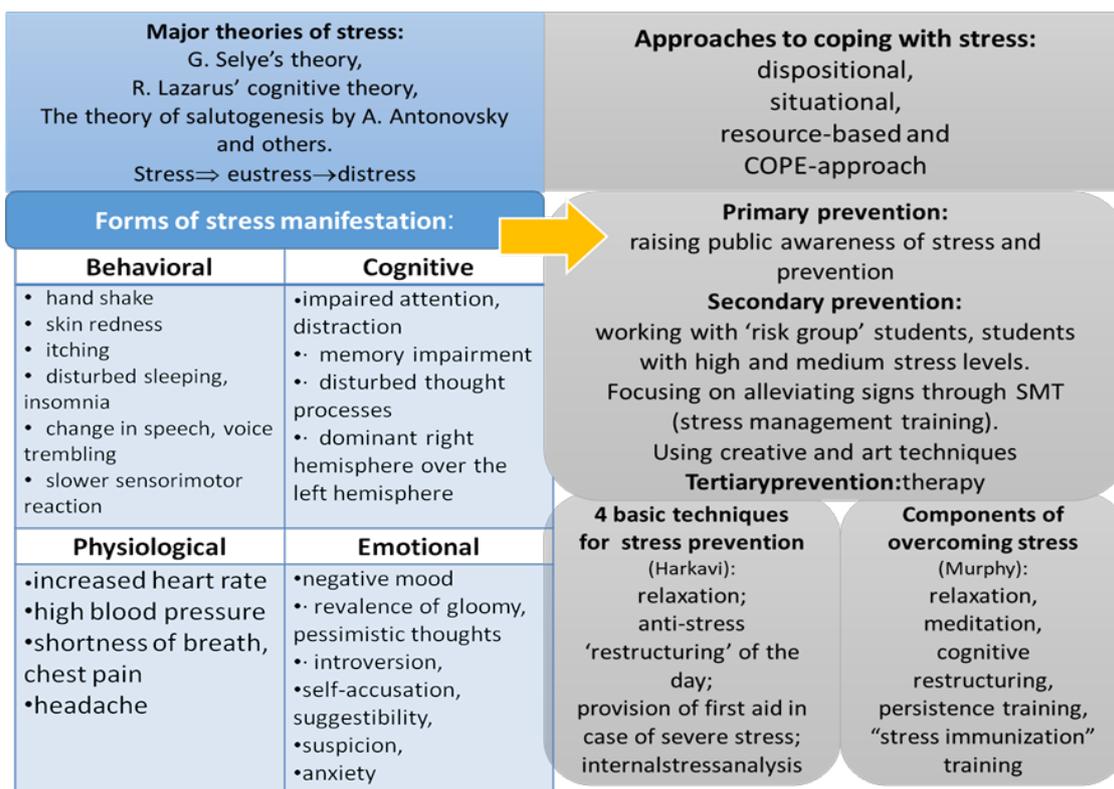


Figure 01. Student handouts

These approaches are connected with the cognitive understanding of the coping behavior. In addition, during the Murphian preventive stages, the following basic stress coping components are used: relaxation, meditation, cognitive restructuring, persistence training, and “stress immunization” training. In another major study, Harkavi (2006) identified 4 basic stress prevention techniques using conscious self-regulation, namely, relaxation, anti-stress ‘restructuring’ of the day, providing first aid in case of severe stress, and internal analysis of stress. Thus, it is important to teach how to gain better understanding of stressful situations, their symptoms, how to assess and develop coping behavior (Awe et al., 2016), and equip oneself with relevant prevention strategies. In our study (Mynbayeva & Serikova, 2018), based on the previous work, which showed a correlation between creativity and stress resistance in schoolchildren, we incorporated creative and art techniques into training sessions for prospective teachers. The training is aimed at introducing the theories of stress, measuring coping with stress, and reflecting on resources available for students to overcome stress. The training is conducted using creative and art techniques. Conventionally, we connected the creative techniques with cognitive activities to create the “new”, to produce new solutions (for example, brainstorming, six thinking hats and others), while the art techniques

were associated with art work (Serikova & Mynbayeva, 2019), the arts. In fact, the techniques represent a useful resource for learners. Let us now turn to transferring the theories learned into a visual presentation (figure 01) that may be used as a handout for students.

Based on the summarization and organization of the theories, a program for stress prevention and building stress resistance in prospective teachers has been designed.

6. Findings

6.1. Designing training sessions of the program

The content of the training program is built around 2 sections each featuring 6 training sessions (Table 02). The duration of each session is one academic hour; stress prevention module takes 6 hours, building resistance to stress module accounted for plus 6 hours. Sessions are held one or twice a week. The program covers primary and secondary prevention. The primary is related to raise awareness of stress and prevention methods; the secondary one is targeting 'risk group' students, i.e. students with high and medium stress levels, and focuses on alleviating symptoms through stress management training with the use of creative and art techniques. Tertiary prevention refers to medical therapy; hence, it is excluded from the program. Let us briefly describe sessions incorporating creative and art techniques.

6.1.1. Module I 'Stress prevention'

Training session 1 - What is stress? Measuring the level of exposure to stress. The first session is introductory, when stress level, coping behavior in stressful situations and stress self-assessment are determined using the selected instruments. Then the basic stress-related concepts are given, along with the mechanisms of stress occurrence, coping behavior and strategies for managing stress. Activities are given for better understanding of a presence or absence of stress using the 'Stress lies in our hands', 'Response to stress' activities, which feature the elements of creativity (Gramling & Aulenbach, 2002).

Session 2 - The first signs of stress. Students are given materials on how to detect stress being aware of its main early signs, whereby each student can 'diagnose' stress reactions to certain stimuli with the help of a self-observation diary and introspections. The activities are conducted to generate experimental self-regulation techniques in the form of simulating an emergency meeting of researchers, where everyone shares their ideas after some thinking. The 'Unconventional Application' activity designed to develop creative thinking within a limited time, employs participants being given various items that they should find effective applications to, and demonstrate their use practice. In addition, during the second session, activities are conducted to develop associative thinking, which proved to be effective in stressful situations.

Training session 3 - Solving problematic situations using the Six Thinking Hats method. The participants are invited to try on different roles depending on the color of the hat (De Bono, 2017). During discussion, a non-standard life situation is presented, which does not have a universal solution. Then students are given hats of six colors, to which various functions are assigned. After discussing the situation, students express their thoughts about the situation and strive to come to a solution. Following a vigorous mental activity, students are offered tension release and relaxation breathing techniques.

Training session 4 - 10 Ways to Prevent Stress. Each student is given an A3 sheet for a poster-making activity, where the unique 10 ways to prevent stress are showed. Students explain each technique to the audience and share their life experiences. ‘Changing hands’ and ‘Modification’ activities are actively used in NLP practice. These NLP techniques work well at least because they bring us people of the state of unconsciousness. Most participants are unable to control stress because they are unaware of their potential to control it.

Table 02. Thematic plan for training sessions

Session No.	Title	Number of hours
Module I ‘Stress Prevention’		
Primary prevention		
1	What is stress? Measuring the level of exposure to stress The first signs of stress	1 academic hour
2		1 academic hour
Primary and secondary prevention		
3	Solving problematic situations with the Six Thinking Hats activity 10 Ways to Prevent Stress	1 academic hour
4		1 academic hour
5	Visualizing inner experiences in a creative way	1 academic hour
6	Measuring the level of exposure to stress	1 academic hour
Total:		6 academic hours
Module II ‘Building Resistance to Stress’		
1	The essence of stress resistance. Determining the level of stress resistance	1 academic hour
2	Tips and lifehacks for stress resistance	1 academic hour
3	Brainstorming as a path to stress resistance	1 academic hour
4	Mind map: creatively, logically, promptly	1 academic hour
5	Building resistance to stress through the associative search	1 academic hour
6	Insight as a creative step towards stress resistance	1 academic hour
Total:		6 academic hours

Training session 5 - Visualizing inner experiences in a creative way. ‘Creative visualization of experiences’ activity helps to illustrate one’s actual experience on a sheet of paper with the help of hands, without brushes, which allows relaxing in the course of this task. After that, a second picture is placed on top of the picture, which shows what helps to cope with stress. Then, ‘The application of skills’ activity is carried out, where everyone shares their skills in different areas, then students think of the ways how these skills may be applied in other areas. The activity teaches how to generate ideas about practical application of the resources available to the participants (Gretsov, 2006).

6.1.2. Module II ‘Building resistance to stress’

Training session 1 - The essence of stress resistance. Determination of the level of stress resistance. A mini-lecture on ‘The essence of stress resistance’ is held, where the main signs of stress

resistance and methods of their development are discussed. After that, the ‘Wheel of Life’ technique is applied, during which the trainees clearly see how satisfied they are with various areas of their lives, choose their priority goals and set specific tasks for a certain timeframe. ‘Two random words’ activity is aimed at developing creativity in the trainees.

Training session 2 – The tips and lifehacks of resistance to stress. The session is devoted to the study of tips and techniques of stress resistance, where the participants independently establish 7 golden rules of stress resistance. For the development of creativity, ‘Deciphering hieroglyphs’ and ‘Associations (5 + 5)’ activities are conducted.

Training session 3 - Brainstorming as a way to build stress resistance. With this technique, students are looking for effective options in managing stress and building resistance to stress. Then a life situation is read out, which must be resolved with the help of ‘brainstorming’. ‘Storyteller’, ‘I am different’ activities are also aimed at developing creativity, which is believed to help develop resistance to stress.

Training session 4 - Mind map: creatively, logically, promptly. When performing the ‘Mind mapping’ activity, the trainees are asked to write down the “Stress” keyword. Then the branches of ‘Stressful situations’ are shown. In doing so, it is necessary to write exactly which situations cause anxious thoughts. Then the branches grow into the approaches, methods and techniques for managing these problems, which are written down. This is followed by ‘Cooling Breath’ relaxation activity and ‘The Creative Architect’ creativity task.

Training session 5 - Building resistance to stress through associative search. For the activity on the associative search, students are given stimuli showing the same figures, and their task is to give each figure the outline of an object, an animal. Next is ‘Tiny Truths’ activity, which was developed by White at the Massachusetts Institute of Technology.

Training session 6 - Insight as a creative step towards stress resistance. The final training session is aimed at developing creative insight and creative thinking. At the end of the session, a follow up diagnostics of the stress level, stress resistance is carried out and the leading coping behavior in stressful situations is determined. The results of all sessions are then summed up.

6.2. Pilot testing the program

The experimental work was guided by the methodology of the Isaeva and Taubaeva (2000) experiment. Pilot testing was conducted in three stages: ascertaining (diagnostic), formative, and control.

Stage 1 - ascertaining (diagnostic), aimed at determining the level of stress and stress resistance students (96 participants participated).

Stage 2 – a formative stage of training sessions aimed at building resistance to stress in the experimental group (42 students).

Stage 3 – follow up diagnostics of stress and stress resistance in the experimental group and comparative analysis of initial and final results.

The purpose of the experiment is twofold, namely to prevent stress and build resistance to stress in students using creative and art techniques. Tasks included measuring the level of stress in students;

conducting training sessions and pilot testing of creative methods, techniques, activities; repeated diagnostics of students for the stress level, assessing the reliability of the experiment.

The pilot testing was conducted at Al-Farabi Kazakh National University and Abai Kazakh National Pedagogical University.

The following methods were selected for the diagnostic stage:

- The PSM-25 Psychological Stress Measure by Lemyr-Tessier-Fillion

The purpose of this instrument is to measure stress in terms of somatic, behavioral and emotional characteristics. The PSM technique was developed in France and is actively used in England, USA, Japan, Russia, Argentina and other countries. To validate and standardize the methodology, it has been tested by more than 5,000 respondents. It is required to provide answers to 25 statements and after each statement circle a number 1 through 8 (never, extremely rarely, very rarely, rarely, occasionally, often, very often, always), evaluating one's condition at the moment or in the recent 5 days. Then the total is calculated as an indicator of mental tension. Points from 0 to 100 represent low stress level, from 100 to 154 - average stress level, from 155 points and above - high stress level.

- 'Coping behavior in stressful situations' (CBSS) Questionnaire by Kryukova (as cited in Bolotova & Molchanova, 2018)

One of the most well-known techniques for measuring coping behavior under stress is the multidimensional CISS (Coping Inventory for Stressful Situations) GRI-VI. Developed by Endler and Parker in 1990, the CISS consists of 48 statements, three scales of 16 questions, defining emotion-oriented, problem-oriented and avoidance behavior under stress. Under the leadership of T.A. Kryukova, the technique has been translated into Russian and back into the original language. In the Russian version, the technique is called CBSS-coping behavior in stressful situations. The questionnaire was adapted and standardized between 1999 and 2001, with a sample of 210 adults and 150 students.

- A comprehensive assessment of stress signs (Shcherbatykh, 2006) includes four stress components: intellectual, behavioral, emotional and physiological components. Each component includes 12 signs of stress, and respondents need to read and tick the signs currently inherent in them.

According to the results of the PSM-25 Lemyr-Tessier-Fillion Questionnaire, at the first stage, 29.2% of students from *the entire sample of 96 participants* have a low level of stress; an average level reported in 37.5% and a high level - in 33.3% of the surveyed students.

According to the results of 'Coping behavior in stressful situations' questionnaire by Kryukova. It was revealed that 40% of respondents in stressful situations choose avoidance-oriented coping, 33% use emotion-oriented coping, and 27% of students render to task-oriented coping.

According to the 'Comprehensive assessment of manifestations of stress' it was revealed that 9% of students have a low level of stress, 13% have a moderate level of stress, 26% have an average level of stress, 22% have a level above average and 30% of respondents have a high level of stress.

In fact, 70.8% of students need secondary prevention according to the first test, versus 62% of students in the sample according to the third method.

As an experimental group for stress prevention and building resistance to stress, 42 participants were selected (groups of students majoring in 'Social Pedagogy and Self-Cognition', 'Pedagogy and Psychology', 'Geography'), in which students had higher stress indicators. The groups were trained in

two modules (on stress prevention and building resistance to stress, Table 02). After the training sessions, a follow up was carried out. The tables below include the data from the ascertaining and control stages for these groups (42 participants) according to the PSM-25 Lemyr-Tessier-Fillion questionnaire, the CBSS questionnaire by Kryukova, and the comprehensive assessment of stress signs by Shcherbatykh.

In the experimental group, 42 participants, at ascertaining stage had 36% of respondents with a low level of stress, 38% with an average level of stress, and 26% with a high level of stress. After the control stage, the following results were obtained: low stress level in 52% students, average stress level in 43% and high stress level in 5% students (Table 03). That is, 40 out of 42 students lowered their stress scores.

Table 03. Changes in levels of stress according to PSM-25 questionnaire (sample of 42 persons)

Low level		Average level		High level	
Before	after	before	after	before	After
36%	52%	38%	43%	26%	5%

In the experimental group there are 42 participants, at ascertaining stage according to the COPS technique, 14% of students have a low stress level, 12% - a moderate level, 29% - an average level, 26% - above average and 19% of respondents - a high level of stress. After the control stage, the following results were obtained: low stress level in 36% of students, moderate level in 12%, average level in 26%, above average in 17% and high stress level in 9% of respondents (Table 04). That is, according to this technique, there was also a decrease in stress indicators.

Table 04. Changes in stress signs according to COPS technique (42 students)

Low level		Moderate level		Average level		Above average		High level	
Before	after	before	after	before	after	before	After	before	after
14%	36%	12%	12%	29%	26%	26%	17%	19%	9%

In the experimental group, at ascertaining stage 43% of respondents used avoidance-oriented coping; 36% - task-oriented coping; 21% - emotion-oriented coping. After the control stage, the following results were obtained: avoidance-oriented coping is used by 33% of respondents; task-oriented coping – by 55%; emotion-oriented coping – by 12% of respondents (Table 05).

Table 05. Changes in coping behavior according to COPS questionnaire

Avoidance-oriented coping		Task-oriented coping		Emotion-oriented coping	
Before	After	Before	before	after	before
43%	33%	36%	43%	33%	36%

Thus, after the training sessions, stress indicators decreased in the experimental group. The validation of the findings was confirmed by statistical analysis using Student's t-test. The Student's – distribution and the confidence interval were calculated. The obtained empirical value of t (6.4) is at the level of significance.

Thus, the decrease in stress level indicators according to the PSM-25 Lemyr-Tessier-Fillion questionnaire, the Comprehensive assessment of stress signs method by Shcherbatykh, indicate the effectiveness of the training program aimed at preventing stress and building resistance to stress students with the use of creative and art techniques and may be used at universities and other educational institutions.

6.3. Discussion

The aim of the study is related to the prevention of stress for prospective teachers using creative and art techniques. We believe that the teacher's creativity, which can be developed through the use of creative and art techniques, enhances stress resistance. A number of scholars have conducted similar studies. For instance, Arinchina, Danube, and Sidorenko, (2015) and Arinchina, Danube, Sidorenko, and Maletskaya (2017) conducted a study to explore stress resistance and its relationship with creativity in 60 fourth-year students. It was found that students with low stress resistance tend to employ ineffective stress management techniques, and show lower level of creativity, namely this category of students use analytical thinking, and in the fight against stress they prefer escaping from problems, avoiding them.

Popova (2012) while drawing on and viewing creativity as a factor in overcoming barriers to professional development, concludes that the development of the creative personality affects occupational burnout. Creative teaching practices help them view situations from different perspectives, quickly adapt to various unfamiliar situations, and get rid of the stereotypical thinking (Lebedeva, 2008).

Another point of view was developed by Khachaturova and Fedorova (2015), who stated the fact that stress has either a detrimental effect or a smoothing effect on an individual's creativity.

Having considered the works of Arinchin, Danube, Popova, as well as having summarized the findings of our study, it can be concluded that creativity has an effect on stress resistance of an individual. Creativity encourages building a different vision of the problem, by thinking out-of-box, it develops fluency, flexibility and originality of the mind, which can facilitate overcoming a stressful situation. Creative thinking also increases resourcefulness and reduces the risk of burnout at work in any field of activity. Eustress, in turn, acts as a motivator and activator of the creative mind.

7. Conclusion

For stress prevention, a training program was developed that included stress prevention and building resistance to stress modules. In the classroom, creative and art activities were used (“The Creative Life”, “Stress lies in our hands”, “Visualizing inner experiences in a creative way”, “The associative search”, “Insight”, etc.). As a result of pilot testing the training program, a positive dynamics of stress-reduction indicators was recorded. Upon delivery of the training program, low stress level was recorded in 52% students (initially 36%), average level in 43% (initially 38%) and high level in 5% of students (initially 26%).

It was found that students majoring in pedagogy (sample of 96 students) resorted to avoidance-oriented coping at the beginning of the experiment (40% of the sample), one third used emotion-oriented coping (33%) and 27% of students employed task-oriented coping. Having been trained in the experimental group, more than half of the students (55%) began using task-oriented coping strategies. Therefore, it is believed that prospective teachers will be able to consciously approach stress prevention and problem solving, thus demonstrating positive coping strategies to their students.

The program components may be integrated into “Pedagogical technique” subject for those majoring in pedagogy, and can also be introduced as a separate course on stress prevention and building resistance to stress for prospective teachers.

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