

Research on Mental States of Anxiety of First-Year Cadets of the University of Life Safety

La investigación de los estados psíquicos de la ansiedad de cadetes del primer año de estudios de la universidad de seguridad de la actividad vital

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Abstract

The purpose is to examine psychological structure, variables and correlation of the factors of mental states of *anxiety* of cadets. Adaptation of first-year cadets of the University of Life Safety plays a key role in the formation and development of a future specialist – a rescue worker. The methodology is based on the understanding of *anxiety* in two dimensions: psychological and physiological. The research results allow the administration of a higher education institution to understand psychological content parameters of mental state of *anxiety* of first-year cadets and operationalize the process of their adaptation. “Expressive-emotional *anxiety*” (44.04%), related to “content *anxiety*” ($r_s = -.177$; $p \leq .01$) and “distant *anxiety*” ($r_s = .164$; $p \leq .01$) are main factors in the structure of cadets’ mental states of *anxiety*. Mental states of *anxiety* affect the level and quality of a cadet’s knowledge. The obtained results can be useful for managers of educational process, directors and teaching staff of higher education institutions of life safety and also for researchers in psychology of *anxiety*.

Resumen

El objetivo del trabajo es estudiar la estructura psicológica, las variables y la interdependencia de los factores de estados mentales de la *ansiedad* de cadetes. La adaptación de los cadetes del primer año que estudian en la universidad de seguridad de la actividad vital es de importancia primordial para la formación y el desarrollo del futuro especialista – socorrista. La metodología consiste en comprender la *ansiedad* en dos dimensiones: psicológica y fisiológica. Los resultados del estudio permiten a la administración de la institución de educación superior comprender los parámetros sustanciosos psicológicos del estado psíquico de la *ansiedad* de los cadetes del primer año de estudios y operacionalizar el proceso de su adaptación. La “*ansiedad* expresiva emocional” (44.04%), la “*ansiedad* sustanciosa significativa” ($r_s = -.177$; $p \leq .01$) y la “*ansiedad* distante” ($r_s = .164$; $p \leq .01$) son factores principales de la estructura de estados psíquicos de la *ansiedad* de cadetes que afectan el nivel y la calidad de sus conocimientos. Los resultados obtenidos son útiles para los organizadores del proceso educativo, la administración y el personal docente de las instituciones de educación superior de seguridad de la actividad vital así que para los investigadores de la psicología de la *ansiedad*.

Key words

Cadet – Rescue Worker – Adaptation – *Anxiety*

Palabras clave

Cadete – Socorrista – Adaptación – *Ansiedad*

Introduction

Permanent radical innovations and transformations in all areas of our social life cause changes in the system of higher education institutions of life safety. The priority of an individual over the system of education makes the administration of higher education institutions and managers of educational process to be engaged in continuous search of competitive technologies providing efficient educational and professional training of rescue workers without losing the significance of the developed competence during the nearest several years after graduation. The present time requires creative professionals, with developed intelligence and readiness for continuous learning. Such graduates must be flexible in adapting to changing life conditions, be able to operationalize their knowledge, abilities and skills to solve current topical problems quickly, to manage resources efficiently, to find the most optimal, sometimes non-standard solutions to complex extraordinary tasks. The level and quality of the management of educational process of future specialists is directly related to the outlined problem. The educational process of training rescue workers takes place in departmental higher education institutions with specific conditions of study and lasts four years. Cadets should not only study curriculum subjects, but also serve and take an active part in their University public life. Efficient professional selection and the procedure of entrance exams allow choosing the best applicants among the entrants. That does not make our problem less topical but, on the contrary, it highlights its complexity. An applicant becoming a first-year student enters a new institution requiring him to mobilize his mental, physical, moral and volitional efforts. The issue of resourcefulness and coping strategies of an individual becomes increasingly important. A cadet's ability to adapt to his environment, enter the University social life, the activities of his group, to take a worthy place and play an important role deserves attention and respect. All these processes are accompanied by *anxiety* and incredibly substantial depletion of mental resources. A cadet's *anxiety* causes a reduction of the ability to work, a loss of quality and efficiency of problem-solving and it has a negative impact on communication with group-mates.

Mental state of *anxiety* of cadet is a special type of mental states integrating a cadet's mental processes and features and providing regulation and self-regulation of educational and professional activities of a future specialist. Efficient management of educational process requires directors and teaching staff to understand organizational features, administration and to know about dominating mental states which can be characteristic of cadets. Therefore, taking into account the above mentioned information, we can state

that the developed competence will assist in organizing educational process. They are that type of applied knowledge that ensures a favorable competitive position of a higher education institution on the market of educational services. The knowledge of psychological content parameters, psychological factor structure, correlations, variables and features of cadets' mental states of *anxiety* are referred to such applied knowledge.

Mental states of *anxiety* of first-year cadets seeking a degree relating to rescue work directly depend on the source causing *anxiety*. The scientist Izard C. examined and established a significant correlation of a mental state of an individual and his/her mental activity. That is, permanent domination of some features of an individual in the course of performing an important activity for a long period of time ensures the formation of the features of mental states on this basis¹. It was established that these features are capable of transforming into mental states of personality². Mental states of expectations in educational and professional activities were examined and their structure and correlations were determined³. We paid attention to the specificity and character of the correlation between *anxiety* and social intelligence of students of different academic areas⁴. The research on social and psychological adaptation of first-year university students and identification of the difficulties of this process is interesting from a scientific point of view. The characteristics of objective and subjective attributes of disadaptation of university students accompanied by increased *anxiety* are important in the analyzed models of adaptation of first-year students in a higher education institution⁵.

Further, we focus on the review of literature about the research on *anxiety* of an individual in the activity. The position of Carl Rogers is interesting in the scientific context. He understands *anxiety* to be an emotional reaction of an individual to internal personal contradictions and considers it as a conflict between the real self and the ideal self. In this scientist's opinion, *anxiety* is a mental state experienced as constraint, tension and an individual is not aware of the reasons for this state⁶. Kuzikova S. believes that it is too difficult to understand the phenomenon of *anxiety*, in particular, the reasons for its emergence. Mental states of *anxiety* are accompanied not by one emotion, but by a combination of actual emotions and each of them affects content features of relationships, somatic state and conative signs. Absolutely different emotional states can be a source of *anxiety* for different people. The scholar thinks that

¹ Izard, C. "The Psychology of Emotions". (N.-Y.: Springer Science & Business Media, 1991).

² Popovych, I. S. "Psychological dimensions of social expectations of personality". (Kherson: KTPH. 2017).

³ Popovych, I.; Blynova, O., Aleksieieva, M., Nosov, P., Zavatska, N. y Smyrnova, O. "Research of Relationship between the Social Expectations and Professional Training of Lyceum Students studying in the Field of Shipbuilding". Revista ESPACIOS, Vol. 40(33), (2019): 21.

⁴ Striletska, I. I. "The Specificity and Nature of the Relationship between Anxiety and Social Intelligence of Students of Different Specialties". Nauka and osvita, 1, (2017): 21-28.

⁵ Tarasova, S. I.; Dukhina, T. N., Limonova, O. O., Kolesnikova, T. V., y Makhova, I. N. "Socio-psychological adaptation of first-year university students". Revista ESPACIOS, 38(56), (2017): 35.

⁶ Rogers, C. R. "Counselling and Psychotherapy. Latest Practical Approaches". (Moscow: EKSMO-Press, 1999).

fear is a key emotion in a subjective experience of *anxiety*. The data obtained by her prove that *anxiety* even contributes to successful activity in common situations and prevents and causes total disorganization of activity – in difficult situations⁷. The research on the signs of *anxiety* in the genesis of aggressive behavior according to the concept of Berezin F. is interesting in the context of our research. The author dwells on the existence of *anxiety* chain, which is an essential content component of the process of psychological adaptation. *Anxiety* chain combines a number of affective phenomena that naturally replace each other as *anxiety* emerges and increases. *Anxiety* chain manifests itself in the following way⁸:

“The feeling of internal tension – hypersthenic reactions – *anxiety* – fear – the feeling of inevitable disaster – *anxiety* and fear disorder”.

Another scientist Prikhozhan A. pays attention to three aspects of *anxiety* as an internal emotional phenomenon: cognitive, emotional and operational. A certain level of *anxiety* within normal limits is characteristic of all individuals and is necessary for optimal adaptation of an individual to social reality. At the same time *anxiety* as a permanent phenomenon is a symptom of a disorder in personality development. A significant level of *anxiety* prevents from efficient activity. The researcher underlines that mental states of *anxiety* are caused by dissatisfaction with principal sociogenic needs, first of all, they are the needs of the personal “self”⁹.

We consider cadets’ mental states of *anxiety* as an integral complex of characteristics, affecting psychological content parameters of educational, professional and service activities, determining the efficiency of solving practical and theoretical problems.

Theoretical analyzing of the principal concepts of *anxiety* of many renowned researchers^{10,11,12,13,14,15} make us understand that there is no single correct position concerning psychological nature of *anxiety*, its types, symptoms and impact on the adaptation process of an individual in educational and professional activities. The mental state of *anxiety* is a special emotional state, alertness, agitation, premonition of threat and danger.

Hypothesis. We assume that psychological structure, variables and interdependence of the factors of mental states of cadets of the University of

⁷ Kuzikova, S. B. “Theory and Practice of Age-related Psycho-correction”. (Sumy: VTD Universytetska knyha, 2015).

⁸ Berezin, F. B. “Mental and Psycho-physiological Adaptation of a Person”. (Leningrad: Nauka, 1988).

⁹ Prikhozhan, A. M. “Psychology of Anxiety”. (SPb: Piter, 2007).

¹⁰ Izard, C. “The Psychology of Emotions...”

¹¹ Berezin, F. B. “Mental and Psycho-physiological ...”

¹² Kuzikova, S. B. “Theory and Practice ...”

¹³ Rogers, C. R. “Counselling and Psychotherapy...”

¹⁴ Prikhozhan, A. M. “Psychology of Anxiety”. (SPb: Piter, 2007).

¹⁵ Striletska, I. I. “The Specificity ...”

Life Safety are important components of the process of their adaptation during the first year of their study; the application of the research results operationalizes the educational process of training future rescue workers.

Purpose. To examine psychological structure, variables and interdependence of the factors of mental states of *anxiety* of cadets of the University of Life Safety.

1. Methodology and methods

The methods of our research are determined by the understanding of *anxiety* in two dimensions: psychological and physiological. Psychological dimension is outlined by behavioral (operational), emotional and cognitive components. Psychological dimension can be realized in the form of cruelty, aggression, apathy, indifference, reticence or escape. Psychological dimension is fundamentally connected with physiological dimension. Physiological dimension is accompanied by fast heartbeat, uncontrolled blood pressure, tremor, constraint, disorders of gastrointestinal tract and other physiological symptoms. Overload on first-year cadets is a key factor causing failures. Extreme overload results in emotional instability, fear, it is accompanied by diffidence, apathy in communication with group-mates. Pysmak L. substantiates the necessity of organizing educational process taking into consideration psychological content parameters of a student. The study considers that psychological and emotional disorders can emerge against a background of psychological overload of first-year cadets who have no clear world-views and are in permanent search¹⁶.

Fundamental methodological positions of the empirical research on the factor structure of mental states of *anxiety* of cadets are a number of successive measures with the use of psycho-diagnostic instruments. The methodology suggested by the scientists was tested when examining mental states of expectations in different activities^{17,18,19,20,21}, in the research on sensor

¹⁶ Pysmak, L. "The Teen Crisis: How to Assist and Help". (Kyiv: VH Shkilnyi svit, 2018).

¹⁷ Khmil, V. V. & Popovych, I. S. "Philosophical and Psychological Dimensions of Social Expectations of Personality". *Anthropological Measurements of Philosophical Research*, 16, (2019): 55-65.

¹⁸ Popovych, I., Blynova, O. Zhuravlova, A., Toba, M., Tkach, T. & Zavatska, N. "Optimization of development and psycho-correction of social expectations of students of foreign philology". *Revista Inclusiones*. Vol: 7 num Especial, (2020): 82-94.

¹⁹ Popovych, I., Borysiuk, A., Zahrai, L., Fedoruk, O., Nosov, P., Zinchenko, S. & Mateichuk, V. "Constructing a Structural-Functional Model of Social Expectations of the Personality". *Revista Inclusiones*, Vol: 7 num Especial, (2020): 154-167.

²⁰ Popovych, I., Kononenko, O., Kononenko, A., Stynska, V., Kravets, N., Piletska, L. & Blynova, O. "Research of the Relationship between Existential Anxiety and the Sense of Personality's Existence". *Revista Inclusiones*, Vol: 7 num Especial, (2020): 41-59.

²¹ Popovych, I., Lymarenko, L., Tereshenko, N., Kornisheva, T., Yevdokimova, O., Koverznieva, A., y Aleksieieva, M. "Research on the Effectiveness of Training Technologies' Implementation in Student Theater". *Revista Inclusiones*, Vol: 7 num 2, (2020): 104-121.

regulation in situations of uncertainty²². All the experimental and empirical studies mentioned here concern the research problem.

It is important to split the semantic core of the outlined problems and select a relevant complex of psychological content parameters. The chosen psychological content parameters become basic scientific units of analyzing mental states of *anxiety* of a cadet. According to the research purpose and subject, we used test methods and standardized questionnaires with high validity and reliability and also factor analysis. We selected test methods that outline psychological nature of the phenomenon under study in the most appropriate way. Such methods and algorithm of the empirical research is a proven fact. The mental state of *anxiety* of first-year cadets is, according to, an integral complex of features outlining mental activity of an individual and affecting the process and the result of their activity²³.

1.1. Participants

The first-year cadets of Lviv State University of Life Safety of the State Emergency Service of Ukraine took part in our empirical research. The sample consisted of 103 persons. The cadets took a first degree course to receive a Bachelor's degree: "Fire safety", "Audit of technological and fire safety", "Ecology and conservation", "Engineering support of sapper, pyrotechnical and explosion practices". The average age of the sample was 17.8 years (SD = 1.3, range 17-23 years). The sample consisted of 94.2% of men and 5.8% of women.

Based on Hollingshead four factor index²⁴, the participants' families corresponded to the following categories: 10.7% low Familiar Socioeconomic-Status (FSS), 20.4% FSS low-medium, 20.4% FSS medium, 25.2% FSS medium-high, 21.4% FSS high, and the 1.9% did not provide information.

1.2. Organization of research

The empirical profile was formed in September 2019 and at the beginning of October, 2019. We used a random principle and chose a sample of the first-year students of the higher education institution who voluntarily agreed to participate in empirical research. The permission to conduct research was given by the administration of the University in advance.

1.3. Procedures and instruments

During the first academic semester we used purposeful observation, questionnaires and psychodiagnostic techniques to organize our empirical

²² Popovych, I. S.; Halian, I. M., Halian, O. I., Burlakova, I. A., Serbin, Iy. V., Toba, M. V., Buhaiova, N. M. y Bokhonkova, Yu. A. "Sensory Regulation of Future Teachers in a Situation of Uncertainty". Revista ESPACIOS, Vol. 41(2), (2020): 28.

²³ Izard, C. "The Psychology of Emotions..."

²⁴ Hollingshead, A. "Four factor index of social status. Unpublished manuscript". (New Haven; Yale University, CT, 1975).

research. In order to obtain the respondents' biographical data necessary for the study, we used questionnaires. A group of test methods was selected to determine psychological content parameters of the phenomenon examined in the research. The questionnaire "The Scale of *Anxiety*" ("SA")²⁵ was used to measure: school *anxiety* (SA), self-estimation *anxiety* (SEA) and personal *anxiety* (PA). The responses were evaluated using a unipolar semantic differential scale, its values being within the following range: (0) – the situation does not seem unpleasant; (1) – the situation disturbs you a little; (2) – the situation is rather unpleasant and it disturbs you, you have an intention to avoid it; (3) – the situation is very unpleasant, it causes *anxiety*; (4) – the situation is extremely unpleasant, it causes strong *anxiety* and fear. The method to examine emotions "Differential Emotions Scale IV-A" ("DES") (Izard, 1993) was used to determine ten mental emotional states: interest (In), joy (J), surprise (S), grief (Gr), anger (A), disgust (D), contempt (C), fear (F), shame (Sh), guilt (G) and parameter 11 – the coefficient of self-feeling (Cs). The responses were evaluated with a unipolar semantic differential scale, its values being within the range of 1 (totally inappropriate) to 4 (absolutely correct). The questionnaire "Scale of self-estimation of reactive (situational) and personal *anxiety*" ("SSRPA") (Spielberger, 1983²⁶; adapted by Hanin, 1983²⁷): self-estimation of reactive (situational) *anxiety* (SR(S)A) and self-estimation of personal *anxiety* (SPA). The responses were within the range of a unipolar semantic differential scale, the ranking of the values was within the range of 1 (no, it is not true) to 4 (absolutely correct). The coping test "Way of Coping Questionnaire" ("WCQ") (Lazarus & Folkman, 1984²⁸; adapted by Kriukova & Kuftiak, 2007²⁹) was used to determine coping-strategies – eight ways to overcome challenges in different areas of mental activity: confrontation (CN), distantiating (D), self-control (SC), seeking social support (SSS), accepting responsibility (AR), avoidance (A), planning to solve a problem (PSP), positive overestimation (PO). The responses were estimated with a unipolar semantic differential scale, its values being within the range of 0 (never) to 3 (often). The indexes of reliability obtained with Cronbach's alpha made: $\alpha_{SA} = .887$; $\alpha_{DES} = .701$; $\alpha_{SSSA} = .721$; $\alpha_{WSQ} = .718$). The indexes of reliability of the methods used and the tests of Cronbach's alpha were within a sufficient .7 and high .9 levels.

1.4 Statistical analysis

Mathematical statistical processing of the empirical data and graphical presentation of the obtained results were realized with the package of statistical software "SPSS" v. 23.0 and MS "Excel". Spearman's rank correlation coefficients (rs) were used to find correlations between psychological content parameters. Arithmetic mean value of minimum (min), maximum (max),

²⁵ Kondash, O. "Excitement: Fear of Trial". (Kiev: Science, 1981).

²⁶ Spielberger, C. D. "State Trait Anxiety". (Mind Garden Inc., California, 1983).

²⁷ Hanin, Yu. L. "Stress and Anxiety in Sports, International Journal of Scientific Articles". Physical Education and Sport, (1983): 12-24.

²⁸ Lazarus, R. S., & Folkman, S. "Stress, Appraisal, and Coping". (New York: Springer Publishing Company, 1984).

²⁹ Kriukova, T. L., & Kuftiak, Ye. V. "The Questionnaire of Controlling (The Adaptation of the Methods WCQ)". Journal of an applied psychology specialist, 3(93), (2007): 102-112.

parameters (M) and mean-square deviation (SD) were calculated. Verification of the parameters of normal distribution was performed with Kolmogorov-Smirnov one-sample criterion λ . Differences between the values of the parameters at level $p \leq 0.05$ considered statistically significant.

2. Results

The research on the factor structure of cadets' mental states of *anxiety*. We estimated the obtained psychological content parameters, according to the scales minimum (min), maximum (max), arithmetic mean (M) and mean-square deviation (SD) presented in Table 1.

Scale	Minimum, min	Maximum, max	Arithmetic mean, M	Mean-square deviation, SD
“SA”				
SA	5.00	37.00	20.67	9.84
SEA	2.00	32.00	17.64	8.77
PA	4.00	37.00	19.27	9.53
“DES”				
In	3.00	201.00	14.59	35.55
J	3.00	53.00	11.67	8.47
S	3.00	52.00	8.37	8.28
Gr	3.00	39.00	4.63	6.45
A	3.00	40.00	7.62	5.76
D	3.00	23.00	3.83	3.44
C	3.00	31.00	4.58	4.64
F	3.00	33.00	4.96	5.13
Sh	3.00	35.00	5.17	4.66
G	3.00	19.00	4.16	3.05
Cs	0.90	31.00	2.83	5.29
“SSRPA”				
SR(S)A	14.00	47.00	29.28	9.547
SPA	9.00	43.00	28.35	8.575
“WSQ”				
CN	16.67	75.00	47.76	18.95
D	12.50	83.33	49.88	24.86

SC	16.67	83.33	69.67	17.74
SSS	12.50	71.43	41.99	21.25
AR	16.67	83.33	54.43	20.82
A	12.50	83.33	43.67	24.87
PSP	12.50	83.33	65.80	19.82
PO	12.50	71.43	48.95	19.61

Note: min – minimum; max – maximum; M – arithmetic mean; SD – mean-square deviation.

Table 1

The values of the scales of psychological content parameters of the research on mental states of *anxiety* (n=132)

The complex of 24 psychological content parameters is relevant, methodologically substantiated and it reflects the essence of our empirical research in the most appropriate way. The logic of selecting methods consisted of a combination of scales that allow determining different types of *anxiety*, self-estimation of *anxiety*, types of emotions and respectively protecting behavioral constructs emerging as a response to disturbing situations. We aimed at measuring psychological parameters of the key points of *anxiety* row (Berezin, 1988). The factor matrix of correlation with 24 variables was determined using the principal component method. The five factors have their values greater than unity and explain 86.963% of the dispersion of the variables (Table 2).

Scale	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
School <i>anxiety</i>	-.284	.915	.027	.052	.072
Self-estimation <i>anxiety</i>	-.298	.912	.094	.068	.062
Personal <i>anxiety</i>	-.270	.916	.084	.015	.017
Interest	.974	.115	-.012	.052	.007
Joy	.956	.119	.006	.033	.032
Surprise	.954	.118	-.021	-.002	.042
Grief	.981	.114	-.015	.049	.000
Anger	.952	.106	.014	.058	.023
Disgust	.979	.129	-.025	.049	-.001
Contempt	.945	.149	-.028	.029	-.001
Fear	.957	.134	-.006	.019	.009
Shame	.932	.129	-.047	.063	-.020
Guilt	.918	.134	-.057	.051	-.051

The coefficient of self-feeling	.962	.120	.016	.032	-.014
Self-estimation of reactive (situational) anxiety	-.270	.916	.085	.014	.016
Self-estimation of personal anxiety	-.316	.833	.154	-.003	.046
Confrontation	.125	-.153	.785	.000	.199
Distantiating	-.189	-.082	-.278	.803	.216
Self-control	.152	-.083	.468	-.587	.582
Seeking social support	.055	-.004	.629	.044	-.627
Accepting responsibility	-.093	.081	-.477	.091	-.357
Avoidance	.025	-.258	.827	.353	.089
Planning to solve a problem	.149	.106	-.110	-.882	-.286
Positive reestimation	.013	-.043	-.727	-.169	.372
Dispersion, %	44.04	18.06	11.74	8.17	4.97
∑ dispersion, %	44.04	62.10	73.84	82.01	86.98
Value	10.569	4.334	2.817	1.960	1.192

Note: The loadings of the significant variables are given in bold type.

Table 2

The matrix of factor loadings of cadets' mental states of *anxiety*

Factor 1 "Expressive-emotional *anxiety*" combined all the psychological content parameters of the test method "DES": "interest" (.974), "joy" (.956), "surprise" (.954), "grief" (.981), "anger" (0.952), "disgust" (.979), "contempt" (.945), "fear" (.957), "shame" (.932), "guilt" (.918), "coefficient of self-feeling" (.962). This mental state of *anxiety* of the respondents is accompanied by an incredibly significant expressive reaction. Negative correlation with self-control and estimated psychological parameters proves a lack of self-control and a low level of self-possession. The cadets in this mental state of *anxiety* sometimes feel fear which can develop into "*anxiety* and fear disorder". The factor "expressive-emotional *anxiety*" is a key one in educational and professional activity of the first-year cadets since everything new always provokes a complex of emotions of different content, modality and amplitude. This factor is closely related to individual psychological features.

Factor 2 “Content *anxiety*” combined all the key psychological content parameters of *anxiety*: “school *anxiety*” (.915), “self-estimation *anxiety*” (.912), “personal *anxiety*” (.916), “self-estimation of reactive (situational) *anxiety*” (.916), “self-estimation of personal *anxiety*” (.833). This mental state of *anxiety* of the first-year cadets is a principal phenomenon and it has a considerable impact on educational and professional activities. The cadets with this mental state of *anxiety* adapt themselves negatively and have serious problems with progress and knowledge quality. The respondents with this mental state are more inclined to coping-strategies of avoidance, distantiating and confrontation.

Factor 3 “Affiliation and isolation *anxiety*” combined: “confrontation” (0.785), “seeking social support” (.629) and “avoidance” (.827). This mental state of *anxiety* of the cadets is characterized by the intention to make an impression on others and at the same time to be confronted and close oneself off. Such cadets often aim at creating a positive general image and are affected by the “effect of facade”. Affiliation motif often plays a role of a protective mechanism for an individual. The cadets with this mental state of *anxiety* always seek support and acknowledgement of their rating of the results of professional and educational activities.

Factor 4 “Distant *anxiety*” includes: “distantiating” (.803), “self-control” (-.587) and “planning to solve a problem” (-.882). The cadets with this mental state of *anxiety* try to distantiate from different “sources of *anxiety*” – responsibilities, current tasks, initiative, duties, etc. since the first days. This mental state of *anxiety* of the cadets is accompanied by a lack of self-control and desire to plan on solving problems even those that are main ones. The respondents with this mental state of *anxiety* have difficulties adapting themselves and they are characterized by destructive behavior and inclined to hide themselves in their internal world. Such cadets are not initiative, their behavior is amorphous and indefinite.

Factor 5 “Self-regulation *anxiety*” combined: “self-control” (.582) and “seeking social support” (-.627). This mental state of *anxiety* of the cadets is characterized by a high level of self-control of their educational, professional and service activities. The intention to do everything properly and in time causes excessive resourcefulness and at the same time such cadets do not seek approval from the part of “significant others”. This mental state of *anxiety* is connected with internal position and an individual’s aspiration for permanent control over his/her thoughts, actions and deeds.

The following factors F insignificant ($\sum FI$) have loading beyond the limits of the total dispersion of variables (.923 and less). Thus, according to the results of the statistical processing there are five main factors (86.98%) and one total factor combining insignificant factors (13.02%). On the whole, all the enumerated factors determine the structure of mental states of *anxiety* of the first-year cadets of the University of Life Safety (Fig. 1).

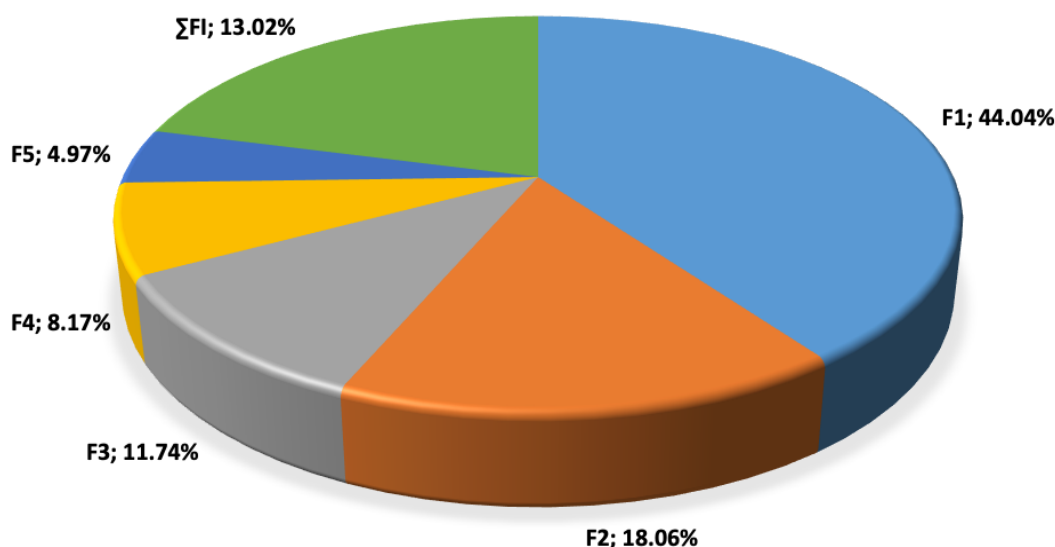


Figure 1
The structure of cadets' mental states of *anxiety*

Interdependence of the factors determining the structure of mental states of *anxiety* of the cadets of the University of Life Safety. We will analyze the most stable correlations between the chosen factors (see Table 3). The correlation between Factor 4 and Factor 5 (.173) is the most significant positive correlation ($p \leq 0.01$). The correlation between Factor 3 and Factor 5 (-.401) is the most significant negative correlation ($p \leq 0.01$). Factor 3 has a maximum number of significant correlations – four. Therefore “affiliation and isolation *anxiety*” is an important component in adaptation process of the cadets of the University of Life Safety. Factor 2 and Factor 5 are the least dependent factors in the structure of cadets' mental states of *anxiety*.

Factor	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	1.000	-.177**	.080*	.164**	.026
Factor 2	-.177**	1.000	-.132**	.029	-.037
Factor 3	.080*	-.132**	1.000	.132**	-.401**
Factor 4	.164**	.029	.132**	1.000	.173**
Factor 5	.026	-.037	-.401**	.173**	1.000

Note: * – statistical significance of $p \leq 0.05$; ** – statistical significance of $p \leq 0.01$.

Table 3
Correlation matrix of the components of the structure of cadets' mental states of *anxiety*

3. Discussion

There is a lack of studies on mental states of *anxiety* of first-year cadets during their adaptation to educational, professional and service activities of the University of Life Safety in scientific literature. The research papers of different years examining the problem of mental states established that they can obtain stability and transform into the features of personality under favorable conditions^{30,31}. We maintain that educational, professional and service activities of the first-year cadets are accompanied by the five mental states of *anxiety* determined in our research. In particular, “expressive-emotional *anxiety*” (44.04%) is such a mental state of *anxiety* transforming into constructive work under proper organization of first-year cadets’ adaptation. The situation with “content *anxiety*” and “distant *anxiety*” is somewhat difficult. Such cadets have more complex forms of *anxiety* that cannot be overcome at the stage of adaptation and have a negative impact on their educational and professional training. Excessive self-control in “self-regulation *anxiety*”, permanent reflexion of one’s thoughts and actions included in the life of cadets will contribute to achieving positive results. The cadets with “affiliation and isolation *anxiety*” need considerable support and assistance at the initial stage that will allow them to reveal themselves, overcoming a critical limit of isolation. It is evident that the work concerning organization of educational, professional and service activities of the first-year cadets requires knowledge and skills of diagnosing and differentiating mental states of *anxiety* of first-year cadets by particular behavioral symptoms – indicators. Certainly, it requires an organizer to be qualified in psychological training.

We state that the chosen complex of test methods made it possible to examine the subject of the research properly. The methods of the empirical research used in our study and the understanding of its key stages and the obtained empirical results are proved in the researchers’ papers on mental states of personality³². Thus, mental state of *anxiety* is a structure of long-term and trans-situational regulation affecting a cadet’s behavior^{33,34}, perfectionism³⁵ determines socially desirable behavioral patterns of individuals of this age³⁶.

We confirmed our hypotheses since the structure, variables and interdependence of the factors of mental states of *anxiety* of the cadets of the University of Life Safety are important components of their adaptation process during the first year of their study; there are empirically determined and

³⁰ Izard, C. “The Differential Emotions Scale: DES IV-A”. New York: University of Delaware, 1993.

³¹ Prokhorov, A. O., Yusupov, M. G. & Plokhikh, V. V. “Cognitive States in the Process of Students’ Intellectual Activity”. *The New Educational Review*, 41(3), (2015): 263-274.

³² Thoman, D., Smith, J., & Silvia, P. “The resource replenishment function of interest”. *Social Psychological and Personality Science*, 2, (2011): 592-599.

³³ Halian, I. M. “Personal determinants of responsibility of future educators”. *Insight: the psychological dimensions of society*, 1, (2019): 15-21.

³⁴ Halian, O. I. “Responsibility and emotional burnout of teachers”. *Insight: the psychological dimensions of society*, 2, (2019): 16-23.

³⁵ Klenina, K. V. “Theoretical and methodological analyzing of content characteristics of an individual’s perfectionism”. *Insight: the psychological dimensions of society*, 1, (2019): 84-89.

³⁶ Shevchenko, A. V. “Research on the correlation between social desirability and value orientations in adolescence”. *Insight: the psychological dimensions of society*, 1, (2019): 90-94.

substantiated reasons to consider that the application of the research results operationalize the educational process of training future rescue workers.

5. Conclusions

The obtained results of the research on mental states of *anxiety* will assist in operationalizing the process of problem-solving in educational and professional training of rescue workers. Finding a correlation of a particular mental state of *anxiety* with knowledge quality and a coefficient of study progress requires further research. It is important to perform some empirical measurements and trace the dynamics of changes in mental states of *anxiety* during the first year of study.

Factor analysis allowed determining the structure of mental states of *anxiety* of the cadets consisting of 5 basic factors (86.98%). It was established that Factor 1 “Expressive-emotional *anxiety*” (44.04%) is a main one, it is correlated with Factor 2 “Content *anxiety*” ($r_s = -.177$; $p \leq .01$) and Factor 4 “Distant *anxiety*” ($r_s = .164$; $p \leq .01$).

It was substantiated that the structure, variables and interdependence of the factors of mental states of *anxiety* of the cadets of the University of Life Safety are important components of their adaptation process during the first year of their study; the obtained empirical results of the research will contribute to operationalizing the educational process of training future rescue workers. The obtained results can be useful for managers of educational process, directors and teaching staff of higher education institutions of life safety and also for researchers in psychology of *anxiety*.

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