

Comparative analysis of emotional personality traits of the students of maritime science majors caused by long-term staying at sea

Análisis comparativo de las características emocionales y personales de los estudiantes de especialidades marinas como resultado de una larga estancia a bordo

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Abstract

The paper examines the issue of emotional personality changes, occurring in the students of maritime and river transport majors caused by long-term staying at sea. The purpose of the research is to conduct comparative analysis of emotional personality states of the students of maritime and river transport majors before and after staying under conditions of long-term onboard training. Methods: observation, conversation with research participants, methods "MMPI" and "Beck *Depression* Inventory". The paper substantiates that changes are caused by a number of physiological, climatic, social and other factors. It establishes correlation between the features of emotional personality state with the fact of long-term staying at sea in the students of the maritime and river transport major. By the scales "pessimism, *depression*" (D): 80 T-points in the group of the senior students, who did onboard training courses, 72 T-points in the group of the junior students, indicating their low mood, lack of self-confidence, caused by a high level of anxiety in the senior students.

Resumen

Se ha estudiado el problema de los cambios emocionales y personales de los estudiantes de la especialidad del transporte marítimo y fluvial como resultado de su larga estancia en el crucero. El objetivo del estudio es realizar el análisis comparativo del estado emocional y personal de los estudiantes de la especialidad de transporte marítimo y fluvial antes y después de su estancia en las condiciones de la práctica de navegación duradera. Métodos: observación, entrevista a los encuestados, metodología "MMPI" y "Beck *Depression* Inventory". Se ha argumentado que los cambios están causados por una serie de factores fisiológicos, climáticos, sociales y otros. Se ha establecido la intercorrelación de las peculiaridades del estado emocional y personal de los estudiantes de la especialidad de transporte marítimo y fluvial con la estancia a bordo durante largo plazo. En la escala "estado pesimista, *depresión*" (D): 80 T-puntos en el grupo de estudiantes de los últimos años que han pasado la práctica de navegación, 72 T-puntos en el grupo de estudiantes de los primeros años, lo que significa que los estudiantes mayores tienen el estado de ánimo decaído, están inseguros de sí mismos debido al estado elevado de ansiedad.

Key words

Depression – Adaptation – Extreme Conditions

Palabras clave

Introduction

A number of various global crisis problems are arising at the present stage of social development. Therefore, it is especially important to search for new possibilities for adaptation of humans and resources to solve them efficiently. High innovative technologies in maritime and river transport are one of constructive methods, requiring special attention¹.

Consequently, the task of considering positive factors, affecting professional growth of an individual and achievement of high professional awareness^{2,3,4} becomes topical. Additionally, the task of examining negative factors, accompanying individuals in their professional activity⁵ is topical as well. Negative factors have a negative impact on professional health of sailors and their personality traits⁶.

Thus, the topicality of this research consists in comparative analysis of emotional personality traits of the students of maritime science majors caused by long-term staying at sea. The task to determine the features of psychological adaptation of ship crew under extreme working conditions is also considered as an important task. It is well known that such conditions often cause professional deformations and psychosomatization⁷.

Many scientists have been interested in the issue of emotional personality changes occurring in sailors as a result of long-term staying at sea^{8,9,10}.

¹ Shevchenko, R. P. "Acmeological approach to the analysis of adaptation potential disorders of students of the maritime and river transport major". *Psychology and social work*, Vol. 21, 1 (49), (2019): 133-142.

² Olefir, V., Kuznetsov, M. & Plokhikh, V. "Effect of physical exercises and perceived stress interaction on students' satisfaction with life". *Pedagogics, Psychology, Medical-Biological Problems of Physical Training and Sports*, 23(1), 2019: 30-35.

³ Popovych, I. S. "Psychological dimensions of social expectations of personality". Kherson: KTPH. 2017.

⁴ Popovych, I. S. "The role of social and psychological expectations in professional growth and personality development". *Philosophy, Sociology, Psychology*, 20 (2), (2015): 213-220.

⁵ Zheglov, V. V., Semjonov, F. M. & Kasatkin, V. I. "Increasing sailors' disease tolerance". *Marine collection of works*, 7 (1984), (2012): 47-51.

⁶ Trankovskij, D. E. "Working conditions and professional morbidity of transport workers in the Primorye". *Health. Medical ecology*, 4 (58), 2013: 111-113.

⁷ Shevchenko, R. P. "Symptoms of adaptation disorders in force-majeure situations in students of the maritime and river transport major under conditions of long-term staying at sea". *Psihologie. Pedagogie specială. Asistența socială*, 2(55), (2019): 84-91.

⁸ Arhipovskij, V. L. & Kazakevich, E. V. "Organizational aspects of the activity of the medical prophylaxis department aimed at improving health of river transport workers". *Ecology of a human*, 12, (2007): 48-52.

⁹ Ereemeeva, A. I. "The research on individual psychological traits of navigators in the aspect of preventive and psychological tasks. *Psycho-hygiene and psycho-prophylactics*". (Leningrad, Piter, 1983).

The urgent necessity of investigating the issues of sailors' health conditions has been emphasized among the topical medical and biological tasks. In our opinion, such attention is explained by working conditions of sailors, performing their professional duties under harsh conditions at sea¹¹. Having analyzed the factors having a negative impact on sailors' working conditions, we distinguished the major ones. They are nature factors: temperature, physical and chemical properties of air, photoperiod fluctuations. We prove that high requirements to homeostatic systems of sailors' organisms can cause the development of premorbid and pathological states.

Members of ship crews are affected by a number of unfavorable factors caused by specific character of work of ship crews. Firstly, they are swaying, vibration, noise and extreme navigation conditions. Under swaying an individual undergoes four types of accelerations: linear, off-center, angular and Coriolis. Swaying may cause problems with coordination of body movement. Noise leads to changes in physiological and psychological processes of an individual, especially in intellectual work, it prevents from understanding and following directions, causes problems with twilight and night vision, malfunction of the vestibular system and leads to untimely fatigue of crew members. The study determines that there are disorders of muscle mechanisms, an increase in common metabolism and a decrease in visual acuity under vibration. Under vibration with the frequency of 38 Hz, visual acuity decreases by 25.0%. A long-term impact of vibration causes exhaustion and headache. Moreover, ship crews experience the impact of sharp changes in temperature, atmospheric pressure, changes of time and climate zones, the impact of electromagnetic fields, separation from families, physiological restrictions, lack of impressions, monotonous work, tension caused by high responsibility and communication scarcity. The effect of these factors is intensified by extreme navigation conditions in the most dangerous areas of the route – in narrow and shallow areas. All these lead to continuous mental strain. In most cases overtired and disoriented crew members cannot make the right decisions, even if they seem simple¹².

Other scientists consider jet lag among the reasons, damaging physiological and social components of an individual's vital functions¹³. Special attention should be paid to prevention of disadaptation disorders during long-time staying at sea. We offer recommendations for optimizing professional activity of sailors under conditions of chrono-physiological adaptation.

We consider the method of preliminary arrangement of sailors' daily routine corresponding to a new time zone to be of special scientific interest.

¹⁰ Reshnjak, V. I., Shhurov, A. G. & Vitjazeva, O. V. "Professional activity of fleet workers under conditions of chrono-physiological adaptation". The bulletin of the State University of the Maritime and River Fleet named after the Admiral S. O. Makarov, 6 (28), 2014: 20-24.

¹¹ Arhipovskij, V. L. & Kazakevich, E. V. "Organizational aspects ..."

¹² Zinchenko, S., Ben, A., Nosov, P., Popovych, I., Mamenko, P. & Mateychuk, V. "Improving Accuracy and Reliability in Automatic Ship Motion Control Systems". Radio Electronics, Computer Science, Control, 2, 2020: 189-201.

¹³ Reshnjak, V. I., Shhurov, A. G. & Vitjazeva, O. V. "Professional ..."

Practical value of the approaches offered by the authors is reflected in the examination of efficiency of physical exercises, sleep and vigilance patterns and dietary regimes in adaptation mechanisms of sailors. In our opinion, these methods activate reserve physiological capacities of an organism and assist in faster adaptation.

Another study proves specific features of maritime work, explained by the impact of climate and geographical factors¹⁴. Endocrine disorders in sailors caused by long-term staying at sea have been examined. The necessity of high-quality healthcare for sailors has been highlighted¹⁵.

We consider the research on adaptive reactions of sailors' organisms in the dynamics of long-term staying at sea to be of considerable scientific interest¹⁶. It presents the evaluation of changes in sailors' organisms by the data of central hemodynamics and a factor pattern of a recovery period of a functional test. The study establishes that leading malfunction of efficient mind adaptation in the first month at sea caused changes in functional condition of a cardiovascular system and lead to a decrease in its functional capacities in the second month at sea.

The paper by A. Ishekov and I. Mosjagin presents the research on stabilometric parameters in sailors under extreme weather conditions¹⁷. The data, showing that at the beginning of their sailing the crew members participating in the research were more resistant to seasickness when compared to the members of the expedition, are interesting in a scientific context. The practical value of the research consists in the examination of adaptive capacities of the cardiovascular apparatus under tough conditions of the arctic sailing.

Therefore, the study of emotional personality traits of sailors has important scientific, occupational, social and psychological aspects. Within the framework of this problem, the issue of emotional personality state of students, pursuing a degree in maritime science majors, and also the examination of changes in their emotional personality state after a long-term (more than three months) onboard training course is especially acute.

We assume that comparative analysis of psychological content emotional personality parameters of the respondents before and after staying under conditions of a long-term onboard training course will allow obtaining new scientific facts to operationalize in professional training of sailors.

¹⁴ Shevchenko, R. P. "Sub-depressive state in students of higher education institutions of the maritime and river transport major". *Psychology: reality and prospects*, 12, 2019: 248-254.

¹⁵ Shevchenko, R. P. "Pathogenic factors under working conditions of workers in maritime and river transport". *Medical psychology*, 4, 2018: 71-75.

¹⁶ Shherbina, F. A. "Adaptive reactions of the organisms of sailors of the fishing fleet in the dynamics of 75-day staying at sea". *The bulletin of the Northern (Arctic) Federal University*, 3, 2014: 91-99.

¹⁷ Ishekov, A. N. & Mosjagin, I. G. "Indexes of stabilometrics in the dynamics of arctic sailing". *The world of science, culture and education*, 4 (41), 2013: 355-358.

The purpose of the research is to do comparative analysis and interpret emotional personality state of students pursuing a degree in maritime and river transport majors to and after staying under conditions of a long-term onboard training course.

1. Methodology and methods

Methodological foundations of our research in the context of interpreting emotional personality state of the students of maritime and river transport majors before and after staying under conditions of a long-term onboard training course are an approved set of successive measures with the use of psycho-diagnostic instruments. This methodology was tested by the scientists while examining distantiation, anxiety and adaptation disorders in students under conditions of long-term staying at sea^{18,19,20}, sensor regulation in situations of uncertainty²¹, motivation of professional development of future specialists in different professions^{22,23,24,25} and also in the research on mental states of expectations in different activities^{26,27,28,29}. All the above mentioned experimental and empirical studies contained the elements of the research on adaptation, anxiety, motivation and self-regulation.

¹⁸ Shevchenko, R. P. "Emotional distantiation in the students of maritime and river transport majors". *Psihologie. Pedagogie specială. Asistența socială*, 1 (49), (2018): 52-59.

¹⁹ Shevchenko, R. P. "Reactive and personality anxiety in the students of maritime and river transport majors". *The juridical bulletin of the University "KROK"*, 32, (2018): 170-175.

²⁰ Shevchenko, R. P. "Phenomenology of adaptation disorders in students under conditions of long-term staying at sea". *Psihologie, revista științifico-practică*, 1-2 (34), (2019): 18-25.

²¹ Popovych, I., Halian, I., Halian, O., Burlakova, I., Serbin, Iy., Toba, M., Buhaiova, N., & Bokhonkova, Yu. "Sensory Regulation of Future Teachers in a Situation of Uncertainty". *Revista ESPACIOS*, 41(2), (2020): 28.

²² Halian, I. M. "Personal determinants of responsibility of future educators". *Insight: the psychological dimensions of society*, 1, (2019): 15-21.

²³ 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.

²⁴ 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*, 40(33), (2019:) page 21.

²⁵ Popovych, I. S., Cherniavskiy, V. V., Dudchenko, S. V., Zinchenko, S. M., Nosov, P. S., Yevdokimova, O. O., Burak, O. O. & Mateichuk, V. M. Experimental Research of Effective "The Ship's Captain and the Pilot" Interaction Formation by Means of Training Technologies. *Revista ESPACIOS*, Vol. 41(№11), (2020:) page 30.

²⁶ Khmil, V. V. & Popovych, I. S. "Philosophical and Psychological Dimensions of Social Expectations of Personality". *Anthropological Measurements of Philosophical Research*, 16, (2019): 55-65.

²⁷ 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.

²⁸ Popovych, I., Borysiuk, A., Zahrai, L., Fedoruk, O., Nosov, P., Zinchenko, S. y Mateichuk, V. "Constructing a Structural-Functional Model of Social Expectations of the Personality". *Revista Inclusiones*, Vol: 7 num Especial, (2020): 154-167.

²⁹ Popovych, I., Kononenko, O., Kononenko, A., Stynska, V., Kravets, N., Piletska, L. y 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.

1.1. Participants

In order to investigate emotional personality traits in students of the marine and river transport major before and after long-term staying at sea, we formed groups of junior students (the first-second years of study) and senior students after doing an onboard training course (the third–fourth years of study) of Odessa National Marine University and Kherson State Marine Academy. In total 104 students took part in the research. The research was conducted under information agreement on the part of the research participants, following the standards of ethics and bioethics. The average age of the sample was 20.9 years (SD = 2.11).

1.2. Instruments

The following methods were used in the course of empirical work: observation, conversation, the methods “MMPI” (adapted by I. Sobchik, 2000)³⁰, “Beck *Depression* Inventory” (A. Beck, 1961³¹, adapted by L. Burlachuk and S. Morozov 2001)³².

The method of observation allowed describing the stages and characteristics of the research process, making purposeful records of behavior and mental phenomena of the research object aimed at examining it under certain conditions.

Conversations with the research participants made it possible to collect additional data on the specificity of feelings and attitudes of the students of the maritime and river transport major taking part in the research.

The method “MMPI”³³, the psycho-diagnostic method, including 566 questions, was used to investigate individual features and mental states of personality within the framework of the interaction with the students of the diagnostic group. We used the following basic clinical scales: the scale of hypochondria (HS) – to determine “proximity” of future sailors to the astheno-neurotic type of personality; the scale of *depression* (D) – to determine the degree of the respondents’ subjective *depression* and the degree of moral discomfort; the scale of hysteria (Hy) – to identify individuals inclined to neurotic reactions of the conversion type; the scale of psychopathy (Pd) – to determine the tendency of sailors to the sociopathic personality type; the scale of masculinity / femininity (MF) – to measure the degree a respondent’s identification with the role of a man or a woman; the scale of paranoia (Pa) – to identify the availability of “overvalued” ideas, suspiciousness (corresponding to the paranoiac personality type); the scale of psychasthenia (Pt) – to identify

³⁰ Sobchik, L. N. Standardized multi-factor method of personality investigation MMPI. St. Petersburg: Rech, 2000.

³¹ Beck, A. T. et al. “An Inventory for Measuring Depression”. Archives of general psychiatry, 4 (6), 1961: 561-571. DOI: 10.1001/archpsyc.1961.01710120031004

³² Burlachuk, L. F. & Morozov, S. M. “Словарь-справочник по психодиагностике”. St. Petersburg: Piter, 2001.

³³ Sobchik, L. N. Standardized multi-factor ...

resemblance of the research participants with patients suffering from phobias (corresponding to the anxious-hypochondriac personality type); the scale of schizophrenia (Sc) – to diagnose the schizophrenic (autistic) personality type; the scale of hypomania (Ma) – to measure the degree of “proximity” of the research participants to the hyperthymic personality type; the scale of social introversion (Si) – to measure the degree of correspondence to the introverted personality type. The scale of social introversion (Si) was not referred to the clinical type of scales. We also used rating scales: the scale of “lie” (L) – to determine sincerity of our respondents; the scale of reliability (F) – to detect unreliable results, related to a respondent’s carelessness, and also pathomimicry and simulation; the scale of correction (K) – to level distortions, caused by excessive unattainability and caution of the future sailors.

The method “Beck *Depression Inventory*”³⁴ contains twenty-one questions-statements of the most frequent symptoms and complaints. Each item of the questionnaire consisted of 4-5 statements, corresponding to specific manifestations and *depression* symptoms. These statements are ranked according to an increase in the share of a symptom in the total severity of *depression* that made it possible to study this phenomenon in our respondents thoroughly.

1.3. Organization of Research

We consider that organizing and conducting research at the stage of professional training of the students of the maritime and river transport major to be timely and reasonable. Such research has a powerful preventive effect. The professions of maritime and river transport are characterized by very specific working conditions. An individual should be adapted to live and work under conditions of long-term isolation, extreme and critical situations^{35,36,37}. This activity is accompanied by stress accumulation, emergence and development of psychosomatic disorders. We should understand that under such critical working conditions, individuals master their professional skills and achieve their “acme”.

The research was carried out at Odessa National Marine University and Kherson State Marine Academy. The research process involved examining: 46 individuals – the junior students, 58 individuals – the senior students after a long-term (more than three months) onboard training course. The procedure of empirical research implied ascertaining experiment. We determined

³⁴ Beck, A. T. et al. “An Inventory for Measuring Depression”. Archives of general psychiatry, 4 (6), 1961: 561-571. DOI: 10.1001/archpsyc.1961.01710120031004

³⁵ Nosov, P. S., Ben, A. P., Mateichuk, V. N. & Safonov, M. S. “Identification of ‘Human error’ negative manifestation in maritime transport”. Radio Electronics, Computer Science, Control. Zaporizhzhia National Technical University, 4 (47), (2018): 204-213.

³⁶ Nosov, P., Ben, A., Safonova, A., & Palamarchuk, I. “Approaches going to determination periods of the human factor of navigators during supernumerary situations”. Radio Electronics, Computer Science, Control, 2 (49), (2019): 140-150.

³⁷ Zinchenko, S., Nosov, P., Mateichuk, V., Mamenko, P., Popovych, I. & Grosheva, O. “Automatic collision avoidance system with many targets, including maneuvering ones”. Bulletin of university of Karaganda, 96 (4), 2019: 69-79. DOI: 0.31489/2019Ph4/69-79

psychological content parameters by means of the methods: “MMPI” and “Beck Depression Inventory”. Participation of the respondents in the research was voluntary and confidential, that ensured no causal response.

The research is conducted according to ethical standards of committee on the rights of experiments of Helsinki declaration³⁸.

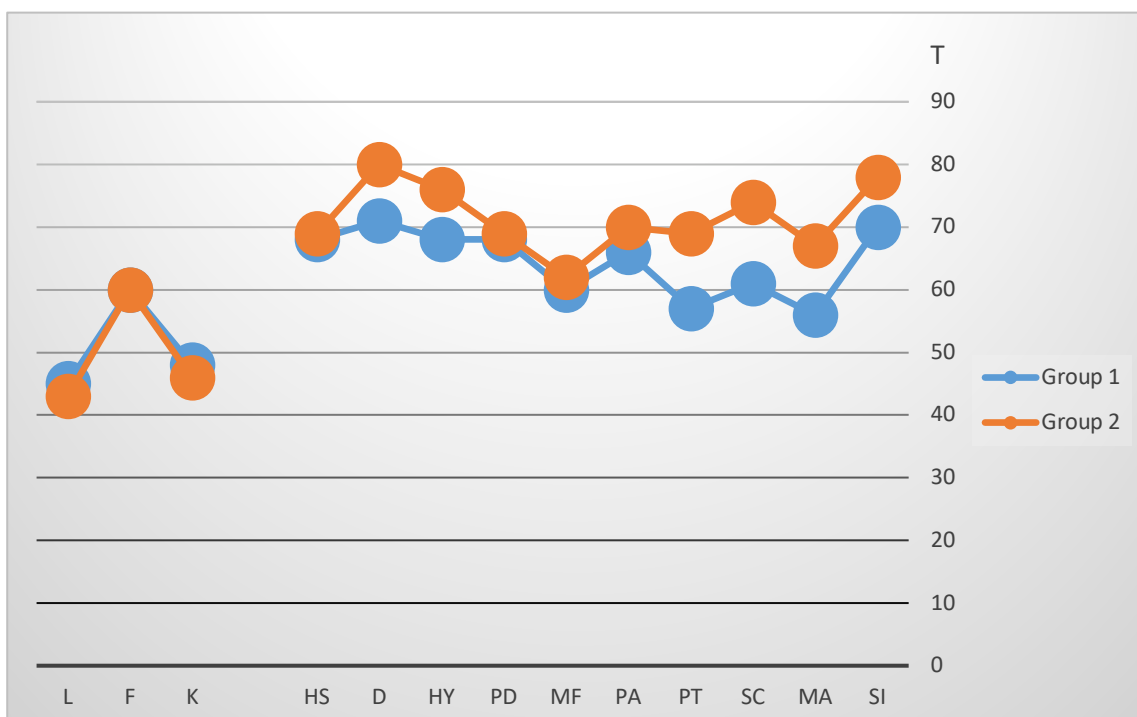
1.4. Statistical Analysis

Statistical processing of the empirical data and graphical presentation of the results were performed by means of the statistical programs “SPSS” v. 23.0 and “Microsoft Office Excel 2007”. Differences between values of parameters at level $p \leq 0.05$ and $p \leq 0.01$ considered statistically significant.

2. Results and Discussion

Analyzing the obtained results, it is necessary to mention the correlation of the availability of disadaptation elements in the respondents’ emotional personality state with the fact of long-term staying at sea. The necessity of further research of the chosen group of respondents is proved by high points by a number of indexes.

The results obtained in the process of examining the students (n=104) of the diagnostic group are reflected in Fig 1.



Note: T – average indexes converted into T-points; Group 1 – junior students; Group 2 – senior students; L – the scale of “lie”; F – the scale of reliability; K – the scale of correction; HS – the

³⁸ “WMA Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects”. (2013).

scale of hypochondria; D – the scale of *depression*; Hy – the scale of hysteria; Pd – the scale of psychopathy; MF – the scale of masculinity / femininity; max Pa – the scale of paranoia; Pt – the scale of psychasthenia; SC – the scale of schizophrenia; MA – the scale of hypomania; max SI – the scale of social introversion.

Figure 1

Profiles of the students of the maritime and river transport major – the junior students and the senior students after long-term staying at sea (by the results of the methods “MMPI”)

The results obtained by the scales “L”, “F”, “K” prove the reliability of the research results.

Analyzing the average profile of the research participants, it is necessary to emphasize the highest point by the scale “pessimism, *depression*” (D): 80 T-points in the group of the senior students after an onboard training course, 72 T-points in the group of the junior students. These indexes show much more distinct low mood in the emotional personality structure of the senior students. In a number of cases lack of self-confidence in the research participants is caused by high anxiety, more characteristic of the senior students after long-term staying at sea.

In their turn, symptoms of disadaptation cause heightened sensitivity to everything happening to an individual and touchiness. In a number of cases vulnerability leads to low stress tolerance and in some cases – to low load tolerance. The research participants mentioned that sometimes they were not able to evaluate a situation quickly and hold attention³⁹, to make quick and timely decisions. According to our observation, that was more characteristic of the senior students after long-term staying at sea. The identified emotional personality traits reflect the dominance of the passive personality position. A high level of awareness of the problems makes adaptation mechanisms weaker in a number of cases that was detected mainly in the senior students after long-term staying at sea in the research process.

The average profile of the research participants by the scale “social introversion” (Si): 77 T-points in the group of the senior students after an onboards training course, 71 T-points in the group of the junior students show inclination to limit social contacts in the respondents’ emotional personality structure. This information is more characteristic of the senior students after doing a training course. In our opinion, difficulties in making social contacts are caused by long-term staying under conditions of limited communication. When an individual is forced to stay under conditions of a limited space, communication with the same people leads to certain passiveness of a personality position, their reflections, evaluations and interests are introspected

³⁹ Nosov, P., Palamarchuk, I., Zinchenko, S., Popovych, I., Nahrybelnyi, Y. & Nosova, H. “Development of means for experimental identification of navigator attention in ergatic systems of maritime transport”. Bulletin of University of Karaganda. Technical Physics”, 1 (97), 2020: 58-69. -69

and oriented towards internal feelings. That is substantiated in the fundamental studies on psychology of social expectations⁴⁰.

According to our observation, lack of objective possibility to change statuses and social roles played daily causes certain reserve in the situation of long-term staying at sea. In a number of cases such “reticence” on the part of an individual is explained by unwillingness to admit others to their own internal world, by the desire to conceal the specificity of their own character from others. The intention to avoid discomfort in communication sometimes leads to the position of a “hermit”⁴¹. An individual consciously chooses the position of “non-interference” when making social contacts.

The research results of the students of the maritime and river transport major by the method “Beck *Depression Inventory*”⁴² are reflected in Tabl. 1.

Level	Group 1 (n=46)		Group 1 (n=58)		Criterion φ^*
	M	%	M	%	
High	4	8.69	6	10.34	.27
Medium	8	17.39	19	32.75	1.81
Low	26	56.52	27	46.55	1.00
Absent	8	17.39	6	10.34	1.05

Note: M – arithmetic mean; Group 1 – junior students; Group 2 – senior students; * – difference in the indexes between Research Group 1 and Research Group 2 by the criterion φ – Fisher’s angular transformation is reliable ($p_\varphi < .05$)

Table 1

Indexes of subjective *depression* in the students of the maritime and river transport major by the method “Beck *Depression Inventory*”

Analyzing the research results, we should emphasize higher indexes by the scales of the method in the mental and emotional state of the senior students of the maritime and river transport major.

According to the data of the comparative analysis of the average profiles of the research participants by the method “MMPI” and the indexes by the method “Beck *Depression Inventory*”, there is an increase in mental and emotional problems in the senior students. For instance, according to the data by the method “Beck *Depression Inventory*” 17.39% of the respondents of Group 1, including the junior students, manifested no distinct symptoms of

⁴⁰ Popovych, I. S. “Psychological dimensions of social expectations of personality”. Kherson: KTPH. 2017.

⁴¹ Nosov, P. S., Palamarchuk, I. V., Safonov, M. S. & Novikov V. I. “Modeling the manifestation of the human factor of the maritime crew”. Dnipropetrovsk National University of Railway Transport named after Academician V. Lazaryan (Dnipro), 5 (77), (2018): 82-92.

⁴² Beck, A. T. et al. “An Inventory for Measuring Depression”. Archives of general psychiatry, 4 (6), 1961: 561-571.

depression by the subjective scale. We have a similar index in Group 2, including the senior students after doing an onboard training course, being 10.34% of the total number of the research participants. According to the data by the method "MMPI", by the scale "*depression*" (D), reflecting the degree of subjective *depression*, the senior students showed more negative indexes: 72 T-points in the junior students, 80 T-points in the students after a long-term onboard training course by this scale.

The students entering the category "without distinct symptoms of *depression*" (17.39% of the respondents in Group 1 and 10.34% of the respondents in Group 2) mentioned in the course of the conversation that they did not usually feel sad. Evaluating the development of their life prospects, they did not feel depressed and disappointed. Analyzing their professional and personal prospects, they considered themselves as those fulfilling their potential. Comparing their success to that of the individuals of their age, this category of students emphasized more prospects for their career development. Evaluating the degree of communication importance, the respondents mentioned that they needed active interaction and communication with others. They felt confident in a decision making process.

Evaluating rightness of their decisions, the students of this diagnostic group seldom feel guilty and unsatisfied. The respondents mentioned that they did not experience the states of groundless anxiety because of their appearances and the impression they made on others. Describing their work efficiency, they mentioned that they worked as well at that time as they did before, they did not see any objective reasons for a decrease in their work efficiency and they could work as productively as they did before. They did not feel disappointed in themselves, in their success, their own achievements. They mentioned that they never thought about doing physiological or emotional harm to themselves.

Evaluating the level of their vitality, the students of this group mentioned that they did not feel tired every day. In the course of the conversation they considered the level of their work efficiency to be quite stable. Evaluating their appetite, they emphasized that their metabolism was normal and their appetite was good.

According to the research results by means of the method "Beck *Depression Inventory*", a low degree of *depression*, by a subjective evaluation, was identified in 56.52% of the respondents of Group 1 including the junior students and in 46.55% of the respondents of Group 2 including the senior students after a long-term onboard training course.

These indexes indicate that the senior students feel sad and gloomy after a training course at see more often than the junior students.

While evaluating their prospects, the senior students with the experience of an onboard training course were more inclined to pessimistic evaluation of their life prospects. In the course of the conversation they evaluated their further

career path, the way of life, related to leaving home periodically, impossibility of full-blown emotional contacts with their families and relatives with some skepticism.

Evaluating their future possibilities, the junior students talked about positive life prospects and success with optimism more often than the senior students with the experience of an onboard training course did.

The senior students with the experience of an onboard training course mentioned that they had fewer communication possibilities and less need of active communication more often than the junior students did. They emphasized that needed active contacts with others less than they did before.

While evaluating their resolution in the issues concerning their everyday routine and long-term life prospects, the senior students after an onboard training course, felt indecisive, they needed more time to think them over and consider them carefully more often than the junior students did. The research shows that the junior students doubted about their appearances more seldom than the senior students with the experience of an onboard training course. When evaluating their optimism, the senior students talked about their possibilities with more skepticism than the junior students did. While evaluating their attitude towards their personality, the junior students mentioned their positive traits more often than the senior students with the experience of an onboard training course did. They talked about their talents and prospects with criticism more seldom.

The research results show that the senior students after an onboard training course mentioned the scarcity of life resources to solve everyday problems more often than the junior students did. They emphasized that they needed to renew their vitality in the course of the day.

The senior students after an onboard training course were disappointed by their evaluations more often than the junior students did. They mentioned that they got tired more quickly, felt less energetic and needed to seek their internal resources. Evaluating their basic life needs, the senior students talked about their poor appetite more often than the junior students did.

A medium degree of *depression*, by a subjective evaluation, being statistically reliable ($p_{\varphi} < .05$), was more characteristic of the senior students after an onboard training course, than of the junior students: in 17.39% of the respondents of Group 1 and in 32.75% of the respondents of Group 2.

However, according to our observation, some senior students are inclined to certain focusing on the words said and the actions done. Without a chance to change the past events, they kept pondering those events and circumstances.

Too severe attitude towards themselves was identified in the senior students after an onboard training course in their poor satisfaction with the

things happening to them. Evaluating more strictly than the junior students, these research participants often felt guilty for not meeting the requirements because of placing too high demands on themselves and others.

As a result, these psychophysiological characteristics led to the development of asthenization manifesting itself in poor appetite and fatigability caused by small efforts of psychological and physiological nature. A high level of *depression*, by a subjective evaluation, was identified in 8.69% of the respondents of Group 1 and in 10.34% of the respondents of Group 2.

The obtained data indicate the state of *depression* and melancholy, more characteristic of the senior students with the experience of an onboard training course than of the junior students. They were more inclined to critical evaluations of their life prospects.

Emotional distantiation and lack of the need to communicate with others were less characteristic of the junior students of this diagnostic category.

Inability to make quick and timely decisions concerning the important issues in social and personal areas was more characteristic of the senior students with the experience of an onboard training course among the research participants of this category.

Evaluating their attractiveness in social and psychological aspects, the junior students showed less negativism in this diagnostic group.

General psychophysiological asthenization manifested itself in regular poor appetite and high fatigability caused by small efforts of psychological and physiological nature.

The problem of emotional personality changes occurring in sailors as a consequence of long-term staying at sea is caused by a number of physiological, climatic, social and other factors. Examination of these issues is reflected in a number of studies^{43,44,45}. At the same time comparative analysis of the emotional personality state of students of the maritime and river transport before and after a long-term onboard training course has not been studied thoroughly and can be a promising area for further research.

3. Conclusions

1) The obtained results prove that the senior students after long-term-staying at sea experience low mood, lack of self-confidence and a high level of anxiety more often than the junior students do.

⁴³ Ivanov, V. I. "Prophylactics of cardio-vascular diseases in the practice of a ship doctor". Marine collection of works, 6 (1995), 2013: 65-68.

⁴⁴ Shevchenko, R. P. "Sub-depressive state in students of higher education institutions of the maritime and river transport major". Psychology: reality and prospects, 12, 2019: 248-254.

⁴⁵ Strelkova, O. V. "Psychological aspects of sailors' professional activity". The bulletin of Emmanuel Kant Baltic University, 5, 2010: 45-51.

2) Higher sensitivity, excessive vulnerability, low tolerance of mental strain and physical loads cause the development of disadaptation that was less characteristic of the junior students. According to our observations, inability to evaluate a situation quickly and make timely decisions was mentioned more often by the senior students after long-term staying at sea.

3) Long-term staying in a “closed staff”, under conditions of limited communication and scarcity of impressions results in reticence, unwillingness to admit others to their internal world and the desire to conceal their character traits from others characteristic of the students of this diagnostic group.

4) These characteristics of the emotional personality traits of the students of the maritime and river transport major prove the necessity to investigate the outlined problems more thoroughly, to develop a system of measures aimed at maintaining not only physical, but also mental health of sailors.

5) The correlation of the elements of disadaptation with the fact of long-term staying at sea stipulates the necessity of further research on emotional personality traits of students of the maritime and river transport major.

6) We maintain that comparative analysis of psychological content emotional personality parameters of future sailors before and after a long-term onboard training course allowed collecting interesting scientific facts advisable to use in professional training of sailors that confirms our hypothesis.

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