

UDC 159.9:005.33:37.04: 004.77

Oleksandra I. Pinchuk

PhD student at the Department of Psychology
Kyiv National University of Trade and Economics, Kyiv, Ukraine
ORCID ID 0000-0001-9894-4090
sashuhis@gmail.com

Nataliia I. Pinchuk

PhD of Psychological Sciences,
Associate Professor, Associate Professor at the Department of Management Psychology
State Institution of Higher Education “University of Educational Management” of the NAES of Ukraine,
Kyiv, Ukraine
ORCID ID 0000-0003-1904-804X
tacya3@gmail.com

Olena I. Bondarchuk

Doctor of Psychological Sciences, Professor, Head of the Department of Management Psychology
State Institution of Higher Education “University of Educational Management” of the NAES of Ukraine,
Kyiv, Ukraine
ORCID ID 0000-0003-3920-242X
bei.07@ukr.net

Valentyna V. Balakhtar

Doctor of Psychological Sciences,
Professor, Professor at the Department of Psychology and Personal Development
State Institution of Higher Education “University of Educational Management” of the NAES of Ukraine,
Kyiv, Ukraine
ORCID ID 0000-0001-6343-2888
valentyna.balakhtar@uem.edu.ua

Kateryna S. Pavlenok

PhD of Psychological Sciences,
Associate Professor at the Department of Theoretical and Applied Psychology
Lviv Polytechnic National University, Lviv, Ukraine
ORCID ID 0000-0002-9154-9095
bkskatrin@gmail.com

USING E-LEARNING TO PREVENT INFORMATIONAL STRESS OF EMPLOYEES WORKING REMOTELY

Abstract. The article deals with the problem of remotely working employees' informational stress caused by crisis conditions in Ukraine. The article analyzes the features of e-learning important for preventing informational stress among remotely working employees. The following specific features of informational stress, by their information impact, are highlighted: 1) features associated with information overload, 2) features associated with human interaction with information technology, and 3) features associated with professional activities.

The article presents the results of a comparative analysis of the psychological characteristics of employees with a conventional mode of remote work and the employees with a forced remote work mode due to crisis conditions (Covid-19, war, etc.).

Based on the results of the interview specially designed by the authors, the factors that, according to employees, contribute to the emergence and development of informational stress have been identified. It was found that informational stress has a complex negative impact on the life, work and social contacts of employees who work remotely. There are statistically significant differences in gender, age, organizational and professional factors in stress development between employees with a conventional mode of remote work and employees with a forced remote work mode due to crisis conditions (Covid-19, war, etc.).

The psychological principles and conditions of the enactment of e-learning, aimed at preventing informational stress among remotely working employees, have been determined. The authors present an e-training program aimed at preventing informational stress among remotely working

employees. The stages of the program implementation are characterized and the most appropriate e-learning tools at each of these stages are indicated. According to the results of the approbation of the program, it was established that the e-learning program can be useful in the distance postgraduate education of specialists.

Keywords: informational stress; e-learning; principles of e-learning; e-learning tools; employees who work remotely; distance work; psychological program; distance postgraduate education.

1. INTRODUCTION

The problem statement. Intense information flows and the advances in information technologies as well as their important role in professional activities, especially under today's crisis conditions in Ukraine (COVID-19 restrictions, martial law, etc.), emphasise the need of remote work. Uncertainty, which is characteristic of such conditions, causes permanent excessive tension and informational stress among employees, which negatively affect their work performance. Accordingly, there is an urgent need to prevent the negative impact of informational stress on employees who work remotely, which can be done, in our opinion, by means of e-learning.

At the same time, the peculiarities of and factors in informational stress development should be taken into account because of the immense increase in the volume and speed of information spread [5], which is often called the “information explosion” (R. Robertson [1] et al), “information overload” (D. Kirsch [2], P. Roetzel [3]), “information flood” (M. Ledzińska [4]), “information pollution” (Q. Iqbal [5]), “data smog” (D. Shenk [6]). The total informatization of society, on the one hand, will lead to development, qualitative transformation and improvement of social structures and processes, and create opportunities for realizing the creative potential of the individual, environment and society. On the other hand, the transition to a digital lifestyle and changes in the information environment become a source of threats to the individual informational and psychological safety [7]. One of the first to pose the problem of informational stress was A. Restian, who defined it as a consequence of both too little and too much information, and the quality of the information [8]. The researchers emphasize that individually- or socially-significant information contributes to the development of psycho-emotional overstrain, stress and stress-related cardiovascular diseases, metabolic disorders, immune system dysfunctions, oncological diseases, as well as mental disorders, anxiety, depression, behavioral disorders, etc. [9, 10]. This, as evidenced by the results of research (L. Jewell, L. Karamushka, C. Maslach, etc.), leads to a deterioration in work performance, an increase in professional mistakes, difficulties in communicating with people, dissatisfaction with work and poor health [11], [12].

It is emphasized that in order to prevent informational stress, the employee must have active listening, analytical abilities, awareness, adaptability to new conditions of the surrounding environment, etc. [7], the ability to self-regulate negative emotional states that minimize feelings of anxiety, fear, and stress [11], which, as practice shows, are insufficiently developed in a significant number of specialists.

Accordingly, employees need special training to prevent the negative consequences of informational stress, which, due to the specifics of their work, can be implemented by means of e-learning [13]. During such training, it seems necessary to pay special attention to the psychoeducation of personnel in the context of developing their stress resistance and introducing means of prevention and overcoming of possible negative effects of informational stress on employees who work remotely.

As evidenced by the literature analysis, e-learning has quite broad opportunities for training the personnel of organizations [14]. That is why the use of e-learning continues to grow and has now become a necessary component of training budgets [15].

At the same time, the results of the study [14] give grounds for the conclusion about the limited use of various e-learning capabilities to achieve objectives connected with those capabilities (e.g., social learning and behavioural change, collaborative learning, etc.).

Therefore, it is vital that e-learning strategies are appropriate not only in terms of financial and technological feasibility but also in the interests of lasting positive effects on employees and organizational culture [16]. It should be taken into account that personal factors play the leading role in e-learning [17], creating favorable conditions for students' subjective well-being and, as a result, effective learning [18].

Analysis of recent studies and publications. The problems associated with the experience of stressful conditions, including informational ones, in various categories of workers, their types, and consequences have been thoroughly studied by both foreign and domestic scientists, in particular L. Burke, F. Jones, S. Horova, L. Karamushka, Je. Mahda, J. Moskowicz, Zh. Virna and others [7], [10], [11], [10] – [21].

The concept of “professional stress” as a multifaceted phenomenon, manifested in mental and physical reactions through stressful situations in professional activities, has been developed in the studies of L. Burke, S. Conley, H. Khvorost, E. Lener, J. Mayo, M. Mellinger, Zh. Virna, S. Woosley, etc. [10], [22], [23].

Informational stress is usually understood as a state developed under the influence of extreme information factors. [20]. A more detailed analysis made it possible to identify the types of informational stress in accordance with the content of information impact: 1) stress associated with information overload; 2) stress associated with human interaction with information technology; 3) informational stress associated with professional activities.

Some external factors like extreme influences of organizational, social, environmental and specialised life features can cause informational stress as a type of psychological stress. However, the basis of informational stress is a transgression of information and cognitive processes of regulation of human activity, so any lifetime and professional events accompanied by mental tension can be a source of informational stress and affect the activities of the individual.

On the other hand, a wide range of works is devoted to highlighting the features of e-learning implementation for training specialists in general, including those who work remotely. At the same time, these works are mainly focused on the technical, technological and educational aspects of e-learning, in particular, organizational support, course development, teaching and learning, course structure, etc. with the purpose of creation of effective Learning Management Systems (LMS) [24], [27]. At the same time, the issue of preventing the negative impact of informational stress, as a vital component of the content of e-learning and the procedure for its implementation, taking into account psychological aspects, is practically not considered.

The research goals. The article analyzes the features of e-learning that are important for preventing employees' informational stress of remote work. The study focused (1) on the empirical investigation of psychological features of employees' informational stress caused by remote work, (2) on identifying the key factors that, according to employees, contribute to the emergence of informational stress and its negative effects (this seems important for designing e-learning programs), (3) on finding out the best psychological conditions for e-learning aimed at preventing informational stress among employees who work remotely, (4) on designing a special e-learning program to help employees who work remotely to cope with informational stress.

2. RESEARCH METHODS

In the course of the research, O. Pinchuk's offering is the formulation of the research problem of specific features of professional activity and informational stress of employees who work remotely in today's crisis conditions, development of the author's questionnaire, with the help of which a comparative analysis of the manifestations of employees' informational stress

in organizations that have always worked at a distance (telework) and those employees who were forced to switch to remote forms of work due to martial law, etc., was carried out.

N. Pinchuk studied and analyzed the work of researchers on the problem of informational stress among employees who work remotely in today's crisis conditions, substantiating a program of e-learning to reduce tension among employees working remotely.

O. Bondarchuk analyzed foreign studies on the damaging effects of informational stress on employees' work performance and performed a statistical analysis of the results using the computer program SPSS (version 23.0), which revealed gender and age characteristics of the informational stress of employees with the conventional mode of remote work and employees with a forced remote work mode due to crisis conditions (Covid-19, war, etc.).

V. Balakhtar conducted an analytical review of research on the problems of remote forms of work, summarized the principles of the multifaceted negative impact of informational stress on life, work and social contacts of employees who are forced to distance work, and identified qualitative indicators of manifestations of informational stress in such employees.

K. Balakhtar analyzed the basic methodological approaches to e-learning and identified the most optimal e-learning tools for preventing informational stress among employees who work remotely.

As a result, this contributed to the holistic and systematic coverage of theoretical and practical aspects of e-learning, important for the prevention of informational stress among employees who work remotely. The instruments used in the study included *K. Weimann's Level of Occupational Stress* [7] to study the features of occupational stress and a questionnaire designed by one of the authors to find out the level of understanding of informational stress by employees who work remotely.

The sample consisted of 156 people, of whom 55.8% were employees who worked remotely because of the absence of office and without face-to-face interaction, and 44.2% were employees who were engaged in distance work because of crisis conditions in Ukraine.

The age composition of the sample is presented as follows: employees under the age of 30 – 51.9%; those aged 35-45 – 15.4%; those aged 45-55 – 25.0%; those over 55 – 7.7% (Table 1).

Table 1

Distribution of employees who work remotely in relation to their age

Age (years)	Number of the respondents (%)
below 35	51.9
35-45	15.4
45-55	25.0
over 45	7.7

As shown in Table 1, the prevailing number of the respondents are young employees, which suggests that telework is quite attractive for young professionals. This is in line with the results of the studies that showed a predominantly positive attitude to telework among students [25].

The respondents were also divided according to their work experience: up to 5 years (25%), 5-15 years (30.8%), 15-25 years (15.4%) and more than 25 years (28.8%).

Concerning the organizational and professional composition of the sample, it is distributed as follows: managers – 25%, employees – 75%. Among them: 5.8% – top managers, 32.7% – middle managers, 61.5% – specialists.

Also, depending on the duration and features of work in remote mode, we distinguished two groups of employees: those who constantly work in this mode (employees with a conventional mode of remote work) and those who are forced to work in this mode due to crisis conditions (employees with a forced mode of remote work).

The experimental array of data obtained during the experiment was subjected to quantitative and qualitative analysis. Data processing was performed using the computer

package of the statistical program SPSS (version 23.0). Criterion χ^2 , correlation and analysis of variance were used to identify statistically significant differences and the relationship between different groups of the respondents and data.

3. THE RESULTS AND DISCUSSION

3.1. Features of work-related informational stress

At the first stage of the empirical research, an analysis of the features of informational stress among employees was carried out using *The Level of Occupational Stress* (K. Weiman [7]) and O. Pinchuk's questionnaire to find out the levels of the understanding of informational stress by the employees who worked remotely.

The K. Weiman's Level of Occupational Stress questionnaire allowed identifying three levels of occupational stress among employees.

Analysis of the data shows that 71.2% of the respondents had an average level of occupational stress, 13.5% had low and 15.4% – high levels of occupational stress. indicating that the overwhelming majority of the respondents adequately perceived and coped with work-related difficulties. Further analysis made it possible to determine the levels of occupational stress in relation to the employees' gender, age, organizational and professional characteristics.

Thus, the dependence of occupational stress levels on the form of work organization of the studied employees was revealed (Table 2).

Table 2

Levels of professional stress of employees with different forms of work organization

Forms of work organization	Levels of professional stress (%)		
	low	average	high
A forced mode of remote work	4.3	78.3	17.4
A conventional mode of remote work	20.7	70.5	8.8

Table 2 shows that at the level of the trend it is established that the vast majority of employees with a conventional mode and a forced mode of remote work had an average, i.e., the optimal level of occupational stress. At the same time, every fifth respondent among the employees engaged in a conventional mode of remote work (20.7%) showed a low level, in contrast to 4.3% of the respondents with a forced mode of remote work, which suggests that the respondents may perceive their work as unimportant, tedious, routine, and uninteresting. High levels of occupational stress are more prevalent among the employees with a forced mode of remote work than the employees with a conventional mode of remote work (17.4% and 8.8%, respectively, $p \leq 0,1$). This category of employees is characterized by high labour intensity, the presence of numerous distractions (work chats, mail, meetings), time wasters, etc., which can lead to deterioration of other activities and the risk of somatic diseases.

The distribution analysis of the employees with different forms of work organization gave the possibility to better understand gender-relevant features of occupational stress. Female employees who were engaged in a forced mode of remote work had a relatively high level of occupational stress compared to men who worked remotely (it was found as a trend) ($p = 0.1$).

Next, we performed a correlation analysis, which found (it was confirmed by the trend) the predominance of the number of the respondents engaged in a conventional mode of remote work with a low level of occupational stress, and this distribution is the same for men and women in this category. At the same time, the study has not found any women with a low level of occupational stress during the conventional mode of remote work.

There is also a high level of occupational stress in a third of male and female employees in various forms of work organization, which requires increased attention from the organization to reduce emotional stress in the workplace.

Also, the features of the development of occupational stress depending on the position were analysed. Managers with low levels of professional stress in any form of work were not identified, which may indicate a high pace of work, and a variety of tasks assigned to company executives. At the same time, for employees with a forced mode of remote work in management positions, the level of professional stress in distance work is slightly higher than for such employees with a conventional mode of remote work (20.0% and 12.5%, respectively).

Regarding ordinary employees, it was stated that the respondents who work remotely with a conventional mode have relatively higher values of low levels of occupational stress compared to the same group with a forced mode (28.6% and 5.6%, respectively). That is, almost a third of workers with a forced mode experience a certain routine, monotony of work. The high level of professional stress in this category of employees is presented relatively equally: a forced mode of remote work – 16.7% and a conventional mode of remote work – 14.3%. Thus, it can be argued that about one-sixth of the employees perceive the professional situation as stressful, one that takes a lot of effort and resources and requires increased attention from the HR services of companies.

At the same time, there is a need to analyse the results of the survey conducted by means of an original questionnaire to determine the employees' understanding of informational stress caused by remote work.

Table 3

Quantitative indicators of the level of understanding of the concept of informational stress by employees

Level	Number of the respondents, %
low	19.2
below average	34.6
average	28.8
high	17.3

The first task in this context was the analysis of the answers to the question: “How would you describe the informational stress?” The quantitative and qualitative analysis of responses allowed identifying the following levels of employees' understanding of informational stress (Table 3).

Table 3 illustrates that 19.2% of the respondents had some difficulties in defining the concept of informational stress. We classified abstract and superficial answers as low level of understanding, such as: “Spasm”, “Negative”, “Woodpecker's headache”, “Not aware”, “Did not encounter”, etc., no answer.

The answers focused on one aspect of informational stress were classified as below-average level (34.6% of the respondents). This level is represented by the following answers: “Excess of negative information”, “Difficult to master new information resources”, “State of increased emotional stress”, “Large data flow”, “Lack of excess necessary information”, “Total fatigue”, and others.

The average level (28.8% of the respondents) meant a concise answer, which generally reflected the main aspects of informational stress, such as: “A huge amount of information that affects the general condition and the ability to analyse”, “The number of tasks (problems) exceeding the time and resources opportunities”, “Stress arising when a person does not cope with a large amount of information”, “Uncomfortable state from the intensity, quantity and unfriendliness of information sources”, “Excess information is completely unnecessary for solving problems”, and others.

The high level of understanding was attributed to the detailed answers testifying to a thorough understanding of informational stress, namely: “Excess or deficiency of information is vital for solving urgent problems for the individual”, “State of increased mental stress with the phenomena of functional and mental disintegration, emotional experiences and disability as a result of adverse human interaction with the information-saturated environment”, “The body’s response to a stimulus, including excess or deficiency of information, and its quality and disorder of the structure”, “Stress caused by lack or excess of information in professional, social-political and personal spheres, or violation of information channels”, “Different quantitative, qualitative characteristics of information that affect the psychological state of the individual”, and others. 17.3% of the respondents had this level of understanding.

So, we can state that, in general, a significant percentage of the employees are sufficiently educated about the essence of the concept of informational stress, however, this knowledge is limited to one aspect of the concept of informational stress.

Further analysis made it possible to identify how the surveyed employees assess the level of informational stress in them.

Table 4

Quantitative indicators of subjective assessment of the development of informational stress by employees

Subjective assessment	Number of the respondents, %
low	32.7
average	36.5
high	30.8

Table 4 demonstrates that the employees almost equally distributed the answers on the subjective assessment of the development of informational stress: 32.7% of the employees define it as low, 36.5% – as medium and 30.8% – as low.

To expand the understanding and perception of the factors of informational stress by the employees, the study analysed quantitative indicators of definitions of its sources, which were divided into four groups: mass media (news, Internet, official sources); professional activity, work; characteristics of information flows; interpersonal interaction (Table 5).

Table 5

Quantitative indicators of informational stress factors

Factors of informational stress	Number of the respondents, %
mass media	51.9
professional activity	46.2
information flows	20.8
interpersonal interaction	11.5

Table 5 shows the distribution of groups of factors of informational stress in employees. According to the respondents, the most negative impact is caused by a group of factors tentatively called “Mass media” (news, Internet, official sources), among which were named: “Information from official sources”, “Digital technologies”, “The amount of bad news”, “Social networks”, “Internet”, “Messengers”, “Mass media”, “Mobile phone”, etc. 51.9% of the respondents named these sources in their answers.

In the second place in terms of the intensity of the impact, the respondents identified a group of factors related to the performance of professional duties, i.e., work and professional activities. This group includes answers: “A large number of regulations and other documents, projects that need to be developed and proposals made in situations of shortage of time”, “The

constant need to keep abreast of news and updates at work”, “Short deadlines, fast-changing new data”, “Limited experience in emerging work issues”, “Accumulation of work”, “Specifics of working with clients”, etc. 46.2% of the respondents noted the presence of such factors.

The next place is occupied by factors related to various characteristics of information flow, which include responses: “Different versions of one event”, “Fast pace of information when there is not enough time to process it”, “Constant external stimuli, the noise outside the window, traffic signals”, “Negative information field”, “Oversaturation of information coming from different sources”, “Infosphere”, and others. The significance of the influence of these factors was noted by 20.8% of employees.

The last group of factors causing informational stress included responses related to various aspects of interpersonal interaction, namely: “a person as a source of various information”, “emotional messages”, “depressed phrases”, “shouts of “Everything is gone!””, “Unpleasant communication with certain people”, “people”, etc. The presence of such factors was noted by 11.5% of the employees.

Thus, it was stated that the employees are most negatively influenced by the media and the character of their work. The presence of such influence was noted by about half of the respondents. However, factors related to information overload and complex interpersonal interaction are vital factors in the occurrence of informational stress for employees with a conventional mode and a forced mode of remote work.

There is also a need to analyse aspects of life that are affected by informational stress, according to the employees. The respondents were offered a list of areas affected by negative impacts: work-life balance; performance of work functions; anxiety for the future; physical health; relationships with inner circle; professional and personal development; and social contacts. These data were subjected to quantitative and qualitative analysis for the frequency of selection of each area. The results of the analysis, which allowed identifying the most significant areas that fall under the negative impact of informational stress, are presented in Table 6.

Table 6

Quantitative indicators of the spheres of influence of informational stress on the employees

Spheres of influence of informational stress	Number of the respondents, %
balance between work and rest	61.5
performance of work functions	48.1
anxiety about the future	48.1
physical health	32.7
relationships with close surroundings	26.9
professional and personal development	25.0
social contacts	13.5

Table 6 demonstrates that more than half (61.5%) of the respondents note that under the influence of informational stress, the ability to maintain a “balance between work and rest” suffers; almost half of the respondents emphasize the reduction of “performance of work functions” and increase in anxiety about the future and their loved ones (48.1% respectively). A third of the respondents experience a negative impact of informational stress on “physical health” and well-being (32.7%). About a quarter of the respondents notice complications in “relations with close surroundings” and limitations in “professional and personal development”

due to the negative influence of informational stress (26.9% and 25.0%, respectively). Only 13.5% of the employees report limitations and deterioration in broad social interaction.

Thus, it can be stated that employees who work remotely experience a complex negative impact of informational stress on their lives, work, and social contacts

The obtained data indicate the need to develop and implement a program of e-learning aimed to prevent informational stress among employees who work remotely.

4. E-LEARNING PROGRAM TO PREVENT INFORMATIONAL STRESS AMONG EMPLOYEES WHO WORK REMOTELY

As known, “e-learning is the learning facilitated and supported by Information Communication technologies (ICT) to enable people to learn anytime and anywhere” [26, p. 2]. The use of ICT makes it possible to use their well-known advantages in the organization of education: increasing efficiency and effectiveness; productive use of time, resources, and efforts; exchange of knowledge and experience; a common platform for cooperation; and expanding the possibilities of interactions [26].

Thus, e-learning is a necessary tool for training specialists who work remotely, as it bridges the gap between a teacher and a student in two different geographical locations [27]. At the same time, it is obvious that for employees who work remotely, online training, being one of the three key training forms (adjunct, blended e-learning, and online) is preferable because it provides maximum independence of students. The online model can be implemented through individual and collaborative learning, where more adaptive training programs are offered in synchronous and asynchronous modes [29], [30] to ensure students a free choice of the learning path.

The following principles of e-learning are distinguished: the principle of conformity (the correspondence of the purpose of the educational program to the professional needs of the applicants), the principle of inclusiveness (supporting inclusive practice), the principle of involvement (the use of experience technologies aimed at increasing motivation), the principle of innovation (based on advanced achievements in the field of education and ICT technologies), the principle of effectiveness (creation of personalized educational E-learning systems), the principle of formative assessment (assessments based on learning achievements and successes), the objectivity of final assessment (reliability, openness and comprehensibility of assessment for all participants in the educational process), the principle of consistency and transparency (compliance with the purpose of educational tasks, methods and tools), the principle of ease of use (accompanying and supporting students at all stages of education), the principle of efficiency (the ratio of the choice of technological solutions to intellectual, time and economic costs) [28]–[30].

The psychological conditions that contribute to employees’ psychological rehabilitation in situations of informational stress and a digital educational environment in conditions of distance postgraduate education were identified. These conditions include the following: the creation of a special social environment, an atmosphere of emotional comfort and creative emancipation, mutual support, trust and respect in a virtual group, activation of adequate self-perception through reflective analysis, and the like.

Specific features of such a social environment in terms of distance learning include: 1) the organization of employees’ joint activities, in which they realize themselves as creative individuals and meet their cultural and spiritual needs; besides, joint, interdependent activity develops a group feeling of usefulness for another with raising personal self-worth; 2) joint formation of group norms and principles of humanistic interaction in the virtual learning environment, including the establishment of partnerships during participation in the program, sincerity, emotional openness and trust in each other, acceptance of another person as a value; tolerance, positive attitude, lack of criticism, active involvement in the group creative process; 3) social and spiritual enrichment in remote joint activities, the joint experience of a sense of

belonging to a certain professional culture, discussion of issues of professional self-determination, etc.; 4) intensification of mental, emotional and behavioural components of joint activities through collective interaction in the digital learning environment; 5) feedback provided by the participants of joint activities (chats, conversations, small-group forms of communication, etc.) in order to ensure the process of self-awareness with the help of others; 6) implementation of a system of developmental tasks that lead to the adoption and play of new social roles that correspond to a person capable of managing informational stress [30].

The authors developed, tested and implemented a special course “How to prevent and overcome stress in complex modern conditions” on the LMS AdL (Learning Management System Adult Learning) platform on the basis of the Ukrainian Open University of Postgraduate Education (<https://uvu.org.ua/kafedra-psykholohii/kpsy-nashi-vykladachi/bondarchuk-oi/iak-poperedyty-ta-podolaty-stres-u-skladnykh-umovakh-sohodennia/>).

The purpose of the special course is to highlight the psychological conditions for preventing and overcoming stress in today’s challenging conditions, which is achieved through the implementation of the following tasks:

1. Deepening ideas about the nature, signs and factors of stress and its consequences.
2. Mastering the methods of diagnosis of personal qualities that are relevant for stress neutralization and the development of stress resistance.
3. Actualization of personal resources to prevent negative influences and overcome stress in today’s challenging conditions.

The special course is designed for 30 hours (1 ECTS credit) and consists of two modules, which are based on our previous research, teaching and coaching work. Modifying the task program and adapting to distance work and interactive methods of work, refreshment training group members have the opportunity to expand their repertoire of effective techniques to achieve personal effectiveness, harmony and success. These are training in a virtual learning environment (using Zoom, BigBlueButton, Google Meet), group discussions, Google Jamboard, Miro, Padlet, SimpleMind, Mindmaster, and “brainstorming” (in chat, Brainsparker, Mentimeter), interactive mini-lectures (PowToon), individual tasks, developmental exercises, analysis of professional and life situations (Padlet, Google Jamboard), group discussions in chat, simulation of situations (LearningApps), methods of self-regulation, visualization and more.

Thus, the first module “The essence, indicators and factors of stress” is aimed at updating and expanding ideas about the nature, indicators and factors of stress and psychological characteristics of individual reactions to the influence of stressors. As a result of mastering the materials of this module, students update their knowledge on the following issues: the phenomenon of stress, sources of emotional tension in the life of an individual, dynamics, forms and factors of stress, nature, signs and factors of occupational stress.

The second module “Prevention and overcoming of negative manifestations of stress and its consequences” is aimed at developing skills in diagnosing, preventing and overcoming the damaging effects of stress on an individual, mastering the techniques of personal self-regulation to optimize stress levels. Participation in the training helps the participants to deepen their understanding of personality stress under challenging conditions, master methods of diagnosing personal qualities relevant to stress neutralization and stress development, promote the ability to personal self-regulation as a vital factor in preventing stress, master methods to optimize ongoing stressful situations.

We have designed a special program to develop stress resistance as a person's ability to perform effectively under stressful conditions based on a combination of educational, training and developmental aspects, adherence to the basic rules of group work, rituals at the beginning and end of each virtual meeting, verbalized reflections, thus creating favourable conditions for overcoming the negative influence of informational stress.

5. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

Informational stress is a kind of psychological stress. They both have common mechanisms of development and specific conditions of occurrence, which are associated with the extreme values of information factors (information overload, use of information technology, handling professional information).

Some external (extreme effects of organizational, social, ecological and technical activities) and internal factors in informational stress have been identified. It is shown that an essential aspect in the development of informational stress is the personal characteristics of employees, which influence their assessment of various events in professional activity (complexity of tasks, lack of time, conflict, etc.) and cause emotional tension and anxiety. These factors are supplemented by the stressors relevant to living conditions, which may be experienced by workers during the crisis conditions of today. The empirical study has revealed gender, age, organizational and professional factors behind informational stress among employees who work with a forced or a conventional mode of remote work.

E-learning is a necessary tool for training specialists who work remotely to prevent the negative consequences of informational stress. The effectiveness and quality of such e-learning are based on taking into account the principles (relevance, involvement, innovation, efficiency, etc.), tools (group discussions with the Google Jamboard, Miro; “brainstorming” in chat, Brainsparker, Mentimeter; interactive mini-lectures with the PowToon, analysis of professional and life situations with the Padlet, Google Jamboard) and psychological conditions (the creation of a special social environment, an atmosphere of emotional comfort and creative emancipation, mutual support, trust and respect in a virtual group etc.) in the process of its implementation.

A special e-learning course to train students in stress coping in today's challenging conditions, can be helpful in distance postgraduate education.

The conducted research does not cover all aspects of the researched topic. In the future, the approbation of the e-learning program for different categories of specialists will identify the specifics of its implementation depending on the specifics of their professional activity and access to various e-learning platforms.

REFERENCES (TRANSLATED AND TRANSLITERATED)

- [1] R. Robertson, “Humanity for itself? Reflections on climate change and the Covid-19 pandemic”, *Globalizations*, vol. 18, issue 5, pp. 762–770, 2021. doi: <https://doi.org/10.1080/14747731.2020.1842684>. (in English)
- [2] D. Kirsch, “A few thoughts on cognitive overload”, *Intellectica*, 1(30), 19–51, 2000. [Online]. Available: <https://interruptions.net/literature/Kirsh-Intellectica00-30.pdf> (in English)
- [3] P. G. Roetzel, “Information overload in the information age: a review of the literature from business administration, business psychology, and related disciplines with a bibliometric approach and framework development”, *Bus. Res.*, 12, pp. 479–522, 2019. doi: <https://doi.org/10.1007/s40685-018-0069-z>. (in English)
- [4] M. Ledzińska, S. Postek, “From metaphorical information overflow and overload to real stress: Theoretical background, empirical findings, and applications”, *European Management Journal*, vol. 35, issue 6, pp. 785–793, 2017. doi: <https://doi.org/10.1016/j.emj.2017.07.002>. (in English)
- [5] Q. Iqbal, S. Yang, R. Nawaz, and K. Iqbal, “A multi-dimensional construct of perceived information pollution in the era of rife infollution”, *VINE Journal of Information and Knowledge Management Systems*, vol. 49, no. 2, pp. 162–180, 2019. doi:10.1108/VJKMS-10-2018-0093. (in English)
- [6] D. Shenk, *Data smog: Surviving the information glut*, London, England: Abacus, 1997. (in English)
- [7] S. V. Horova, *The person in the information society: today's challenges*, Kyiv, Ukraine: 2017. (in Ukrainian)
- [8] A. Restian, Informational stress: discussion paper, *Journal of the Royal Society of Medicine*, Vol. 83(6), pp. 380–382, 1990. (in English)
- [9] L. Diachenko, “Medico-social substantiation of the model of optimization of primary care for the population under stress conditions”, Ph.D. dissertation, Shupyk National Medical Academy Of Postgraduate Education of the Ministry of Healthcare of Ukraine, Kyiv, 2019. (in Ukrainian)
- [10] Y. Mahda, *Hybridwar: to survive and win*, Kharkiv, Ukraine: Vivat, 2015. (in Ukrainian)
- [11] S. Maksymenko, L. Karamushka, and T. Zaychykova, *Burnout syndrome and professional careers of employees of educational organizations: gender aspects*, Kyiv, Ukraine: Millennium, 2004. (in Ukrainian)

- [12] C. Maslach, and M. Leiter, *The truth about burnout: how organizations cause personal stress and what to do about it*, San Francisco, USA: Jossey-Bass, 2000. (in English)
- [13] K. S. Akpoviroro, and O. A. O. Adeleke, “Moderating Influence Of E-Learning On Employee Training And Development (A Study Of Kwara State University Nigeria)”, *SocioEconomic Challenges*, 6(2), pp. 83-93, 2022. doi:10.21272/sec.6(2).83-93.2022. (in English)
- [14] M. N. Giannakos, P. Mikalef, and I. O. Pappas, “Systematic Literature Review of E-Learning Capabilities to Enhance Organizational Learning”, *Inf. Syst. Front.*, 24, pp. 619–635, 2022. doi:10.1007/s10796-020-10097-2. (in English)
- [15] C. James-Springer, and K. Cennamo, “Introduction”, in *A Tool for Determining e-Learning Readiness. Springer Briefs in Educational Communications and Technology*, Cham, Switzerland: Springer, 2021. doi:10.1007/978-3-030-76994-9_1. (in English)
- [16] L. Servage, “Strategizing for workplace e-learning: some critical considerations”, *Journal of Workplace Learning*, vol. 17, no. 5/6, pp. 304-317, 2005. doi:10.1108/13665620510606733. (in English)
- [17] A. Kapo, A. Mujkic, L. Turulja, and J. Kovačević, “Continuous e-learning at the workplace: the passport for the future of knowledge”, *Information Technology & People*, vol. 34, no. 5, pp. 1462-1489, 2021. doi:10.1108/ITP-04-2020-0223. (in English)
- [18] Center for Teaching and Learning. *Promoting student well-being in learning environments: A guide for instructors*, Washington University in St. Louis, 2022, [Online]. Available: <https://ctl.wustl.edu/well-being/> (in English)
- [19] L. Burke, J. Mayo, E. Lener, and M. Mellinger, “Perspectives on job stress in the serials information world”, *Serials Review*, vol. 35, issue 1, pp. 35-41, 2009. (in English)
- [20] F. Jones, J. Bright, and A. Clow, *Stress: myth, theory and research*, Harlow, England; New York, USA: Prentice Hall, 2001. (in English)
- [21] J. Moskowitz, D. Shmueli-Blumberg, M. Acree, and S. Folkman, “Positive Affect in the Midst of Distress: Implications for Role Functioning”, *J. Community Appl. Soc. Psychol.*, vol. 22, issue 6, pp. 502–518, 2012. (in English)
- [22] Zh. Virna, H. Khvorost, *Psychology of professional safety: technologies of constructive self-preservation of the personality*: coll. monogr., Lutsk, Vezha – Druk, 2015. (in Ukrainian)
- [23] S. Conley, S. Woosley, “Role stress, higher order needs and work outcomes”, *J. of ed. admin.*, vol. 38, no. 2, pp. 179–201, 2000. (in English)
- [24] Th. Govindasamy, “Successful Implementation of e-Learning Pedagogical Considerations”. *The Internet and Higher Ed.* 4. 287-299, 2001. doi:10.1016/S1096-7516(01)00071-9. (in English)
- [25] E. Moens, E. Verhofstadt, L.-V. Ootegem, and S. Baert, *Disentangling the Attractiveness of Telework to Employees: A Factorial Survey Experiment*; IZA (Institute of Labour Economics) DPL 2022, no. 15190; Institute of Labour Economics: Bonn, Germany, 2022. (in English)
- [26] N. Kaushal, E-Learning: Meaning, Importance And Relevance In Higher Education. Digital Governance: Theory And Practice, Unit II, 2020, [Online]. Available: https://www.lkouniv.ac.in/site/writereaddata/siteContent/202004120815046665Nandita_Kaushal_E_learning.pdf. (in English)
- [27] H. A. Wani, “The Relevance of E-Learning in Higher Education”, *J. Kaji. Pendidik.*, vol. 3, no. 2, pp. 181–194, 2013. (in English)
- [28] V. Arkorful, N. Abaidoo, “The role of e-learning, advantages and disadvantages of its adoption in higher education”, *Int. J. of Educ. and Res.* vol. 2, no. 12, pp. 397-410, 2014. (in English)
- [29] FAO. *E-learning methodologies and good practices: A guide for designing and delivering e-learning solutions from the FAO elearning Academy*, II ed., Rome, 2021. doi:10.4060/i2516e. (in English)
- [30] J. Anderson, R. McCormick, Ten pedagogic principles for E-learning. A. McCluske ed. *Policy and Innovation in Education. Quality Criteria*. Brussels: European Schoolnet, pp. 10-15, 2006. (in English)

Text of the article was accepted by Editorial Team 12.09.2021

ВИКОРИСТАННЯ ЕЛЕКТРОННОГО НАВЧАННЯ ДЛЯ ЗАПОБІГАННЯ ІНФОРМАЦІЙНОГО СТРЕСУ ПРАЦІВНИКІВ, ЯКІ ПРАЦЮЮТЬ ДИСТАНЦІЙНО

Пінчук Олександра Ігорівна

аспірантка кафедри психології

Київський національний торговельно-економічний університет, м. Київ, Україна

ORCID ID 0000-0001-9894-4090

sashuhis@gmail.com

Пінчук Наталія Іванівна

кандидат психологічних наук, доцент, доцентка кафедри психології управління
Центрального інституту післядипломної освіти
Державний заклад вищої освіти «Університет менеджменту освіти» НАПН України, м. Київ, Україна
ORCID ID 0000-0003-1904-804X
tasya3@gmail.com

Бондарчук Олена Іванівна

доктор психологічних наук, професор, завідувачка кафедри психології управління
Центрального інституту післядипломної освіти
Державний заклад вищої освіти «Університет менеджменту освіти» НАПН України, м. Київ, Україна
ORCID ID 0000-0003-3920-242X
bei.07@ukr.net

Балахтар Валентина Візиторівна

доктор психологічних наук, професор, професорка кафедри психології та особистісного розвитку
Навчально-наукового інституту менеджменту та психології
Державний заклад вищої освіти «Університет менеджменту освіти» НАПН України, м. Київ, Україна
ORCID ID 0000-0001-6343-2888
valentyna.balakhtar@uem.edu.ua

Павленок Катерина Сергіївна

кандидат психологічних наук, доцентка кафедри теоретичної та практичної психології
Національний університет «Львівська політехніка», м. Львів, Україна
ORCID ID 0000-0002-9154-9095
bkskatrin@gmail.com

Анотація. У статті розглядається проблема інформаційного стресу дистанційно працюючих співробітників, викликаного кризовими умовами в Україні, аналізуються особливості електронного навчання, важливі для попередження цієї проблеми. Серед них виділені: 1) особливості, пов'язані з інформаційним перевантаженням, 2) особливості, пов'язані із взаємодією людини з інформаційними технологіями, 3) особливості, пов'язані з професійною діяльністю. У статті наведено результати порівняльного аналізу психологічних особливостей працівників зі звичайним режимом дистанційної роботи та працівників з вимушеним дистанційним режимом роботи через кризові умови (COVID-19, війна тощо).

За результатами спеціально розробленого авторами інтерв'ю виявлено фактори, які, на думку працівників, сприяють виникненню та розвитку інформаційного стресу. Встановлено, що інформаційний стрес комплексно негативно впливає на життя, роботу та соціальні контакти співробітників, які працюють віддалено. Існують статистично значущі відмінності за статтю, віком, організаційними та професійними факторами розвитку стресу між працівниками зі звичайним режимом дистанційної роботи та працівниками з вимушеним дистанційним режимом роботи через кризові умови (COVID-19, війна тощо).

Визначено психологічні принципи та умови впровадження електронного навчання, спрямованого на попередження інформаційного стресу дистанційно працюючих працівників. Автори представляють програму електронного навчання, спрямовану на запобігання інформаційного стресу співробітників, які працюють віддалено. Охарактеризовано етапи реалізації програми та вказано найбільш прийнятні засоби електронного навчання на кожному з цих етапів. За результатами апробації програми встановлено, що програма електронного навчання може бути корисною в дистанційній післядипломній освіті спеціалістів.

Ключові слова: інформаційний стрес; електронне навчання; принципи електронного навчання; засоби електронного навчання; співробітники, які працюють віддалено; дистанційна робота; психологічна програма; дистанційна післядипломна освіта.



This work is licensed under Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.