Ecology of vital activity as an element of antistress therapy on the example of the organization of the work of a medical center with industrial enterprises under the VMI program

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The pandemic the new Coronavirus infection has brought changes in the health status of a large number of our citizens. The consequence of this has been a higher rate of employees seeking medical care and subsequent sick leave. Crisis phenomena in the economic and social life of society are associated with the consequences of the pandemic, moreover, the stress burden on the population increases with the consequences of the pandemic. All this affects the level of performance. The transferred COVID-19 has increased the number of patients with complaints of pain in joints and muscles, with the phenomena of cardiovascular pathology, as well as in breathing, increased frequency of asthma attacks, etc. That is, complications affected a wide range of diseases [1-4]. All this is the consequence, including neurological pathology, which is closely related to stress. According to surveys of several large industrial enterprises, 31.7% of those seeking medical help report anxiety, sleep problems, and a feeling of fatigue [5]. Exacerbation of chronic diseases was recorded in more than 50% of patients with COVID-19. The figures show that more than 1/3 of the population is chronically unwell, and more often than usual they apply for sick leave, which inevitably leads to a decrease in economic indicators [6-10].

Pressing stress, increased anxiety, and increased stress levels in people who have had COVID-19, not as a virus, the disease itself led to these symptoms, but as a symptom of fear of getting sick, getting serious complications, decreased immunity, sitting at home, isolation [11,12]. COVID-19 is associated with fear, which created a special effect, because of which people began to experience stress. For many cities and countries, increased stress has become an indirect effect on people, the very situation of this disease has caused alarming symptoms. Our research has shown that anti-stress measures for people increase labor productivity. We set the task of dealing with stress. Affect the side effects of tension, anxiety associated with the fear of getting sick, and isolation. The aim of the study: to reduce tension, and anxiety caused by the side effect of COVID-19. At the beginning of the 2022 period, a large number of stress-related sick leaves were recorded, this was not observed on 1.11.2022.

The purpose of the measures initiated was to systematically reduce the stress load due to the introduction of a healthy lifestyle and increase the competence of employees of enterprises in terms of more environmentally friendly behavior. Carrying out activities aimed at introducing healthy eating habits, observing sleep and rest, and anti-stress therapy.

The main part

The effectiveness was checked in the network of the Perm Krai medical center "Philosophy of Beauty and Health". It is a general profile center with departments such as neurology, therapy, surgery, cardiology, dentistry, urology, gynecology, surgery, cosmetology, pediatrics, operating unit, endocrinology, ultrasound, radiotherapy department, including MRI, ophthalmology, ENT department, gastroenterology [13-15].
The main type of service is the conclusion of large corporate contracts on the health insurance system.

Currently, on November 1, 2021, according to these agreements, there are 9,539 people in this center. As of November 1, 2021, all these persons underwent an initial medical examination, as well as an initial analysis of the frequency of requests for sick leave. These data made up the primary dataset for assessing the real state of these enterprises [16-19]. The analysis showed that 9.5% of the working time of employees of these industrial enterprises for the period from January to November 11 months of 2021 was lost due to sick leave. Of these, 3.5% of the sick leave is directly related to COVID-19. Thus, other reasons for the loss of working time due to illness were associated with other diseases.

In accordance with the contract, we faced a problem – how to quickly and effectively reduce the loss of working time not related to the COVID-19 disease. To solve this problem, the results of the initial medical examination were examined, which revealed the following: more than 50% of people who most often seek medical help note a decrease in tone, fatigue, anxiety, low emotional background, sleep problems, etc. In addition, 48% of the total number examined also note the constantly present stressful factors [20-23].

We have developed a system that has significantly reduced the impact of early named negative manifestations.

The system includes the following activities: a health school was opened at each enterprise, within the framework of which educational events were held, meetings with doctors of various specialties, schools of healthy nutrition, training of therapeutic and restorative physical education, and systematic classes on anti-stress therapy with specialized specialists.

In order to combat physical inactivity, we conducted field health days combining competence enhancement in terms of improving the competence of a healthy lifestyle, combining physical activity, gamification of tasks, creating a benevolent atmosphere, and a positive emotional background.

These systems of measures were analyzed a year later on November 1, 2022. As a result, the loss of working time on sick leave decreased by 2 times and amounted to 4% of the total standard [24,25]. The number of complaints related to fatigue, anxiety, etc. decreased from 40% to 15%. Employers also note an improvement in economic indicators and an increase in labor productivity of 2%.

The analysis shows the high effectiveness of measures aimed at health conservation and the values of a healthy lifestyle. Thus, the implemented system shows positive dynamics, and therefore it was decided to continue and develop this system.

References
1. Smith KA. Louis pasteur, the father of immunology? Front Immunol.
2. Cavaillon JM. The historical milestones in the understanding of leukocyte biology initiated by Elie Metchnikoff. J Leukoc Biol. 2011 Sep;90(3):413-24. doi: 10.1189/jlb.0211094. Epub 2011 May 31. PMID: 21628329.
3. Boechat JL, Chora I, Morais A, Delgado L. The immune response to SARS-CoV-2 and COVID-19 immunopathology - Current perspectives. Pulmonology. 2021 Sep-Oct;27(6):423-437. doi: 10.1016/pulmoe.2021.03.008. Epub 2021 Apr 9. PMID: 33687315; PMCID: PMCP8040543.
4. Celardo I, Pace L, Cifaldi L, Gaudio C, Barnaba V. The immune system view of the coronavirus SARS-CoV-2. Biol Direct. 2020 Dec 29;15(1):30. doi: 10.1186/s13002-020-00285-2. PMID: 33371901; PMCID: PMC7769684.
5. Chen Y, Liu Q, Guo D. Emerging coronaviruses: Genome structure, replication, and pathogenesis. J Med Virol. 2020 Oct;92(10):2249. doi: 10.1002/jmv.26234. Epub 2020 Aug 2. Erratum for: J Med Virol. 2020 Apr;92(4):418-423. PMID: 32881013; PMCID: PMC7435528.
6. Kvartych EI. The state of the human immune system under the conditions of urbanization. Scientific Electronic Journal Meridian. 2020; 19(53): 12–14.
7. Efimov GA. Interview with G.A. Efimov. T-CELL immune is much better protected from virus mutations than humoral. Nature. 2021; 5(1269): 3–8.
8. Majumdar S, Verma R, Saha A, Bhattacharyya P, Maji P, Surjit M, Kundu M, Basu J, Saha S. Perspectives About Modulating Host Immune System in Targeting SARS-CoV-2 in India. Front Genet. 2021 Feb;16:637362. doi: 10.3389/fgene.2021.637362. PMID: 33664772; PMCID: PMC7921795.
9. Carsetti R, Quintarelli C, Quinti I, Piano Mortari E, Zumla A, Ippolito G, Locatelli F. The immune system of children: the key to understanding SARS-CoV-2 susceptibility? Lancet Child Adolesc Health. 2020 Jun;4(6):414-416. doi: 10.1016/S2352-4642(20)30135-8. Epub 2020 May 6. PMID: 32458804; PMCID: PMC7208280.
10. Ryzynka MF, Potapova KE, Ulyanova EA, Korzinina NA. The prevalence of a new coronavirus infection among children. Literature review. Bulletin of Public Health and Healthcare of the Russian Far East. 2021; 2(43): 48–58.
11. Povorova OV. State of cellular immunity in children with recurrent respiratory diseases. Immunopathology, allergology. Infectology. 2020; 4: 64–74.
12. Manuilov VA. Differential diagnosis of immunity to SARS-COV-2: neutralizing antibodies, avidity, cellular immunity. In the collection: Socially significant and especially dangerous infectious diseases. Materials of the VIII All-Russian interdisciplinary scientific and practical conference with international participation. Sochi. 2021: 124–125.
13. Popova AYu. SARS-COV-2 seroprevalence among the population of the Belgorod region against the backdrop of the COVID-19 epidemic. Epidemiology and infectious diseases. Topical Issues. 2021; 11(1): 18–24.
14. Pogodina EA, Lobov AV, Ivanova PI. Induction of anti-SARS-CoV-2 immune reactions in immune-compromised patients. Russian Journal of Biotherapy. 2021; 20(4):18-25. DOI: 10.17650/1726-9784-2021-4-18-25.
15. Röttingen K, Nielsen SCA, Silvia O, Younes SF, Zaslavsky M, Costales C, Yang F, Wirz OF, Solis D, Hoh RA, Wang A, Arunachalam PS, Colburg D, Zhao S, Haraguchi E, Lee AS, Shah MM, Manohar M, Chang I, Gao F, Mallajosyula V, Li C, Liu J, Shoura MJ, Sindher SB, Parsons E, Dashdorj NJ, Dashdorj ND, Monroe R, Serrano GE, Beach TG, Chinthrajah RS, Charville GW, Wilbur JL, Wohlstadter JN, Davis MM, Pulendran B, Troxell ML, Sigal GB, Natkunam Y, Pinsky BA, Nadeau KC, Boyd SD. Immune imprinting, breadth of variant recognition, and germinal center response in human SARS-CoV-2 infection and vaccination. Cell. 2022.
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Mar 17;185(6):1025-1040.e14. doi: 10.1016/j.cell.2022.01.018. Epub 2022 Jan 25. PMID: 35148837; PMCID: PMC8786601.

16. Kharchenko EP. New method for immune epitope recognition, markers of long-term immunity, immunosuppressive domains, and COVID-19 vaccines. Epidemiology and Vaccination. 2022; 21(1): 4-20.

17. Korzhenevsky AA. Interpretation of the immunogram in inflammatory processes: textbook. Allowance Comp.: Ufa: Publishing house of FGBOU VO BSMU of the Ministry of Health of Russia. 2017; 115.

18. Kostarev SN, Kochetova OV, Tatarnikova NA, Sereda TG. Study of the human infectious safety model under the influence of SARS-CoV-2 on the example of the Perm Krai of the Russian Federation. E3S Web of Conferences. 2021; 282: 06005.

19. Sereda TG, Kostarev SN, Kochinov YA, Kochinova TV. Building a tool model for the study of the ecosystem "coronavirus - Vector - Human - Environment. IOP Conference Series: Earth and Environmental Science. 2020; 548(4): 042030.

20. Chen TM, Rui J, Wang QP, Zhao ZY, Cui JA, Yin L. A mathematical model for simulating the phase-based transmissibility of a novel coronavirus. Infect Dis Poverty. 2020 Feb 28;9(1):24. doi: 10.1186/s40249-020-00640-3. PMID: 32111262; PMCID: PMC7047374.

21. Elfly Ky AA. Anti-HCV, nucleotide inhibitors, repurposing against COVID-19. Life Sci. 2020 May 1:248:117477. doi: 10.1016/j.lfs.2020.117477. Epub 2020 Feb 28. PMID: 32119961; PMCID: PMC7089605.

22. Grech V. Unknown unknowns - COVID-19 and potential global mortality. Early Hum Dev. 2020 May;144:105026. doi: 10.1016/j.earhumdev.2020.105026. Epub 2020 Mar 31. Retraction in: Early Hum Dev. 2021 Aug;159:105377. PMID: 32247898; PMCID: PMC7270771.

23. Sarkodie SA, Owusu PA. Investigating the cases of novel coronavirus disease (COVID-19) in China using dynamic statistical techniques. Helinyon. 2020 Apr;6(4):e03747. doi: 10.1016/j.helinyon.2020.e03747. Epub 2020 Apr 4. PMID: 32289090; PMCID: PMC7128585.

24. Enserink M, Kupferschmidt K. With COVID-19, modeling takes on life and death importance. Science. 2020 Mar 27;367(6485):1414-1415. doi: 10.1126/science.367.6485.1414-b. PMID: 32217707.

25. Robson B. Computers and viral diseases. Preliminary bioinformatics studies on the design of a synthetic vaccine and a preventative peptidomimetic antagonist against the SARS-CoV-2 (2019-nCoV, COVID-19) coronavirus. Comput Biol Med. 2020 Apr;119:103670. doi: 10.1016/j.compbiomed.2020.103670. Epub 2020 Feb 26. PMID: 32209231; PMCID: PMC7094376.