Classification of stressful factors associated with COVID-19 pandemic and quarantine among Ukrainian military personnel

N. V. Danilevska^D*

Zaporizhzhia State Medical University, Ukraine

Key words:

stress, risk factors, COVID-19, pandemic, quarantine, health disorders, military.

Zaporozhye medical journal 2022; 24 (1), 56-60

*E-mail: legennant@gmail.com The COVID-19 pandemic and quarantine have caused psychological distress, which has led to mental and physical health problems and changes in the behavior patterns of many people. It is known that the cause of such stress in the civilian population is not a pandemic or quarantine in general, but only some of their components. However, although COVID-19 pandemic and quarantine can provoke health disorders also in military personnel, stressful factors directly triggering these disorders have not yet been identified.

Aim: to identify the immediate stressors that threaten Ukrainian military personnel health during the COVID-19 pandemic and quarantine.

Materials and methods. The study was conducted at the Zaporizhzhia Military Hospital and Zaporizhzhia State Medical University between March 2020 and May 2020. A total of 25 military personnel hospitalized during this period were examined. Clinical, psychopathological, psychological examinations was conducted. The Fear of COVID-19 Scale was also used.

Results. The stressful factors associated with the COVID-19 pandemic and quarantine, which had provoked health disorders in military personnel, have been identified and systematized into four groups: vital fears, social fears, domestic and organizational stress, abstract experiences. All these groups have been also described here.

Conclusions. Identification of psychogenic factors will help to determine targets for psychotherapy and reduce the negative effects of the COVID-19 pandemic and quarantine and prevent a decline in fighting capacity.

Ключові слова:

стрес, фактори ризику, COVID-19, пандемія, карантин, розлади здоров'я, військовослужбовці.

Запорізький медичний журнал. 2022. Т. 24, № 1(130). С. 56-60

Класифікація стресових факторів, пов'язаних із пандемією COVID-19 та карантином, серед військовослужбовців української армії

Н. В. Данілевська

Пандемія COVID-19 і карантин стали для багатьох людей причиною психологічного дистресу, який спровокував порушення психічного, фізичного здоров'я та поведінкових патернів. Відомо, що причиною такого стресу в популяції цивільних людей є не пандемія та карантин загалом, а тільки окремі їхні компоненти. Незважаючи на те, що пандемія COVID-19 і карантин можуть провокувати погіршення здоров'я військовослужбовців також, стресогенні фактори, що безпосередньо викликали ці розлади у військовослужбовців, досі не встановлені.

Мета роботи – виявити безпосередні стресові фактори, що є причиною погіршення стану здоров'я українських військовослужбовців під час пандемії COVID-19 і карантину.

Матеріали та методи. Дослідження здійснили на базі Запорізького військового госпіталю та Запорізького державного медичного університету в період з березня до травня 2020 року. Обстежили військовослужбовців, які були госпіталізовані в цей період, – 25 осіб. Здійснили клінічне, клініко-психопатологічне, психодіагностичне дослідження. Під час дослідження використовували Шкалу страху COVID-19.

Результати. Виявили та систематизували стресові фактори пандемії COVID-19 і карантину, що спровокували розлади здоров'я у військовослужбовців. Визначили та описали 4 групи чинників: життєві страхи; соціальні страхи; домашній та організаційний стрес; абстрактні переживання.

Висновки. Ідентифікація психогенних чинників допоможе визначити мішені психотерапії та зменшити негативні наслідки пандемії COVID-19 і карантину, запобігти зниженню боєздатності армії.

Ключевые слова:

стресс, факторы риска, COVID-19, пандемия, карантин, расстройства здоровья, военнослужащие.

Запорожский медицинский журнал. 2022. Т. 24, № 1(130). С. 56-60

Классификация стрессовых факторов, связанных с пандемией COVID-19 и карантином, среди военнослужащих украинской армии

Н. В. Данилевская

Пандемия COVID-19 и карантин стали для многих людей причиной психологического дистресса, который спровоцировал нарушение психического и физического здоровья и поведенческих паттернов. Известно, что причиной такого стресса в популяции гражданских лиц является не пандемия и карантин в целом, а лишь отдельные их компоненты. Несмотря на то, что пандемия COVID-19 и карантин также способны провоцировать ухудшение здоровья военнослужащих, стрессо-генные факторы, которые непосредственно вызвали эти расстройства у военнослужащих, до сих пор не установлены.

Цель работы – установить непосредственные стрессовые факторы, которые являются причиной ухудшения состояния здоровья украинских военнослужащих во время пандемии COVID-19 и карантина.

Материалы и методы. Исследование проведено на базе Запорожского военного госпиталя и Запорожского государственного медицинского университета в период с марта по май 2020 года. Обследовали всех военнослужащих, которые были

госпитализированы в этот период, – 25 лиц. Проведено клиническое, клинико-психопатологическое, психодиагностическое исследование. В ходе работы использовали Шкалу страха COVID-19.

Результаты. Выявили и систематизировали стрессовые факторы пандемии COVID-19 и карантина, которые спровоцировали расстройства здоровья у военнослужащих. Выделили и описали 4 группы факторов: жизненные страхи; социальные страхи; домашний и организационный стресс; абстрактные переживания.

Выводы. Идентификация психогенных факторов поможет определить мишени психотерапии и уменьшить негативные последствия пандемии COVID-19 и карантина, предупредить снижение боеспособности армии.

In late 2019, an outbreak of acute respiratory syndrome and atypical pneumonia was first reported in Wuhan and then spread across the population of China. It was proven later that its causative agent was Coronavirus strain SARS-CoV-2 (Severe acute respiratory syndrome coronavirus 2). This disease was named Coronavirus Disease 2019 (COVID-19) [1].

COVID-19 provoked an epidemic in China, and later, the outbreak was declared by the WHO as a Public Health Emergency of International Concern on 30 January 2020, and the beginning of a pandemic was announced on March 11, 2020 [2].

There were many deaths due to the COVID-19 and no specific treatment. The health care system in many countries was not ready for this large number of cases [3].

Unprecedented anti-epidemic measures have been implemented in many countries around the world and were named as quarantine measures [4,5].

These restrictions affected people's lives resulting in significant changes in their usual lifestyle.

There was no information about the origin of SARS-CoV-2. This has caused a lot of misinformation about the virus origin, COVID-19, and quarantine in the media [6].

All these factors associated with the pandemic and quarantine influenced the behavior patterns, psychological well-being, and population health of the countries. Reports of human health deterioration associated with the pandemic and quarantine began to appear from the beginning of 2020 and has increased in numbers. But all these observations refer to the civilian population [7–9].

In the context of Ukraine, the impact of the COVID-19-related pandemic and quarantine on the health of military personnel is of great importance. The Anti-terrorist operation, and then the Joint Forces Operation due to the Russian aggression, has been carried out in Ukraine since 2014 [10,11]. Therefore, the identification of factors affecting the fighting capacity of the army is relevant.

Aim

To identify the immediate stressors that threaten Ukrainian military personnel health during the COVID-19 pandemic and quarantine.

Materials and methods

The study was conducted at the Zaporizhzhia Military Hospital and Zaporizhzhia State Medical University between March 2020 and May 2020. This was the period of the first and strongest quarantine restrictions in Ukraine.

The study was approved by the Medical Ethics Committee of Zaporizhzhia State Medical University. All participants gave their informed consent to participate in the study. It was a single-center prospective clinical trial. A total of 25 military personnel hospitalized during this period were examined. Of them, 14 military personnel, aged 38.86 ± 2.08 years, who had COVID-19 pandemic and quarantine-related health disorders were selected. Military personnel did not suffer from COVID-19, but they had stress associated with the COVID-19 pandemic and quarantine, which was an important criterion.

The Fear of COVID-19 Scale (FCV-19S, D. K. Ahorsu et al., 2020) was used to determine the level of COVID-19 fear. It is a seven-item reliable and valid psychometric scale that includes items related to somatic and psychological experiences triggered thoughts and information about COVID-19 [12].

A semi-structured psychological interview was conducted based on the list of questions developed. The patients were interviewed about their knowledge regarding COVID-19; the source of information about COVID-19; the frequency of receiving information; their attitude towards the COVID-19 pandemic and quarantine; changes in their well-being and life due to the pandemic; their thoughts or situations associated with the COVID-19 pandemic and quarantine influencing well-being; their attitude towards the possibility of contracting the virus; their expectations about the consequences in all spheres of life in case of SARS-CoV-2 infection; their assessment of the risk to be infected both in and outside the army, and factors influencing their opinion.

Based on the results of analysis covering the military personnel complaints, answers to questions, conversations, memories, and spontaneous statements, the COVID-19 pandemic- and quarantine-related experiences, which were timed to coincide with health deterioration, were selected and systematized.

Mental, facial, and ethological correlates with COVID-19 pandemic- and quarantine-related experiences were also looked at to understand the significance of these experiences for patients in provoking the COVID-19-related stress.

Analysis was done using Statistica for Windows 13 (StatSoft Inc., No. JPZ804I382130ARCN10-J). The methods of descriptive, mathematical, and medical statistics were used in the statistical process. Structural analysis and synthesis to identify causal relationships between the studied data were applied. Spearman's correlation coefficient (r (s)) was also calculated to identify correlations between markers. A P-value ≤ 0.05 was considered statistically significant.

Results

The structure of negative thoughts and anxiety which induced the COVID-19 pandemic- and quarantine-related stress and health disorders in the Ukrainian army military personnel were studied. All COVID-19 pandemic- and



quarantine-related stressful factors, associated with health deterioration among military personnel, were divided into four groups:

 vital fears, such as death anxiety or fear of suffering from severe COVID-19;

– social fears, such as fear of social stigma in the event of COVID-19, namely, fear that other people will refuse to have contacts with a COVID-19 person even after recovery, and fear of being discharged from the army due to COVID-19. This group of anxiety also included worrying that relatives may contract the COVID-19 and feeling uncomfortable with the unusual absence of people on the streets associated with quarantine restrictions;

 domestic and organizational stress, meaning negative feelings and discomfort symptoms related to the quarantine measures imposed in the country. Overall, the life of servicemen was significantly hindered, for example, closure of transport traffic or shops and kindergartens attended by their children;

– abstract experiences, referring to COVID-19 pandemic- and quarantine-related concerns about the country and the population as a whole (*Fig. 1*).

Most military personnel had a combination of several COVID-19-associated experiences.

Vital fears were the most common detected in 57.14 % of military personnel with COVID-19 pandemic and quarantine-related health disorders. All military personnel with

somatoform autonomic dysfunction of the cardiovascular system, dissociative (conversion) disorder, anxiety syndrome, and 87.5 % of military personnel with stress-associated hypertensive emergency feared that they would die of SARS-CoV-2 infection, and one of them with dissociative (conversion) disorder had a combined fear: fear of dying and fear of severe physical suffering from COVID-19. In this case of dissociative (conversion) disorder, the mental symptoms developed after the military personnel learned of their planned referral to a high-risk area of SARS-CoV-2 infection and were convinced that they would be infected.

21.43 % of military personnel were anxious about a severe course or deaths from infectious diseases among acquaintances, and this anxiety worsened negative expectations for SARS-CoV-2 and heightened the vital fears.

Vital fears were also characteristic of military personnel who were at a risk of contact with COVID-19 patients during their service. There were 28.57 % of such military personnel and in $\frac{1}{2}$ of cases, they already had contact with COVID-19 people resulting in hypertensive emergency, and they expected to have a contact with COVID-19 people, which caused a combination of hypertensive emergency with anxiety syndrome in the other half of cases.

Anxiety syndrome was revealed in 28.57 % of military personnel. The military personnel with anxiety syndrome, among other factors, also had COVID-19-induced informational overload, and it played a significant role in their health deterioration. Data on the epidemiology, transmission, mortality, terrible features of the COVID-19 clinical picture, method ineffectiveness for COVID-19 treatment, daily reminders of the need for adherence to preventive measures with the threat of possibility to be infected in case of non-compliance with these measures were stressful information.

The military personnel with COVID-19 pandemic-induced anxiety syndrome got a lot of time-consuming stressful information about COVID-19 through media, social networks, and continuously discussing COVID-19 and its consequences with colleagues and relatives. These military personnel had the highest scores on the FCV-19S (20.5 \pm 2.02) among the group.

There was a relationship between the level of COVID-19 fear and the daily information content regarding COVID-19. The more frequently the military personnel received information about COVID-19, the higher the level of COVID-19-related fear and anxiety was (rs = 0.76, P = 0.05). The military personnel with anxiety syndrome received information about COVID-19 daily several times.

Their wives also shared their feelings about COVID-19. There was an effect of mutual induction of anxiety and fear.

The first time the military personnel became aware of COVID-19 was also important: the earlier the servicemen learned about COVID-19 (from late 2019 to early 2020), the more likely they were to have fears and anxiety associated with the COVID-19 pandemic. There was a suspense of imminent gradually coming event in that case.

A total of 35.71 % of military personnel had pre-pandemic disorders in an anamnesis, and social fears exacerbated these disorders in all cases of observation. Thus, concerns about the well-being of relatives during the pandemic worsened the symptoms of adjustment disorders (7.14 %). One serviceman reported the expectation of negative social consequences in the event of SARS-CoV-2 infection, such as social stigma or discharge, as the main factor of health deterioration associated with the COVID-19 pandemic. This led to the destabilization of hypertension and caused stress-associated hypertensive emergency. Feeling uncomfortable with the unusual absence of people on the streets during quarantine (7.14 %) was the factor for the destabilization of hypertension in combination with anxiety.

35.71 % of military personnel noted the occurrence of discomfort due to the imperfection of domestic and organizational measures during COVID-19 quarantine, which provoked domestic stress associated with anti-epidemic measures. These included restrictions on long-distance and public transport, which prevented them from reaching their place of service or returning to their homes; the closure of kindergartens and schools made the problem for the military personnel of looking after their young children; closed shops with the necessary goods.

Domestic stress associated with anti-epidemic measures aggravated the symptoms of pre-pandemic disorders – post-traumatic stress disorder (PTSD), adjustment disorders, panic disorder [episodic paroxysmal anxiety], hypertension.

In addition to domestic and organizational experiences, PTSD patients were dominated by abstract experiences concerning the possible impact of the COVID-19 pandemic, not on them but on the country as a whole, for instance, feelings about the injustice of quarantine measures for society. At the same time, these experiences were caused by receiving false information about the COVID-19 pandemic, for example, information about an "international conspiracy".

Discussion

COVID-19 pandemic and quarantine have caused factors that have a stressogenic effect. Many studies indicate that COVID-19 pandemics, quarantine, and lockdown cause psychological distress in civilians, which, in turn, can lead to anxiety, depression, suicidal tendencies, eating disorders, substance abuse, weight gain, sleep disturbances, etc. [13–17].

Among the stressors for pandemic and quarantine in the civilian population are:

- terrible information about COVID-19, which causes fear of infection [18];

 requirements of social distancing and self-isolation, which lead to the forced reduction of social contacts [19];

 mass closure of companies for quarantine, which results in job loss and financial insecurity [20];

 prolongation of the time spent by family members with each other in one place, provoking an increase in episodes of domestic violence [20];

 prolongation of home time with a lifestyle change leads to a behavioral modification, including a decrease in physical activity and an increase in sitting time and daily screen time [21].

This study has shown differences between the range of the COVID-19 pandemic- and quarantine-related stressful factors in military personnel and those in civilians.

Interestingly, the factors that are most stressful among the civilian population, for instance, social distancing and lifestyle changes, were not stressful for military personnel. This can be explained by the peculiarities of military service, for example, a pre-pandemic adaptation of military personnel to wear overalls and certain restrictions on interpersonal interaction during military service.

This suggests that the prophylactic measures of COVID-19 pandemic- and quarantine-related stressful factors in military personnel should be different from those in the civilian population.

Conclusions

1. The groups COVID-19 pandemic- and quarantine-related stressful factors that provoke health disorders in military personnel have been detected.

2. The following groups of stressful factors that provoke health disorders in military personnel have been identified: vital fears (death anxiety or fear of suffering from severe COVID-19), social fears (fear that other people will refuse to have contact with a person with COVID-19, even after recovery; fear of being discharged from the army due to COVID-19; anxiety (worrying about having relatives infected with COVID-19 and feeling uncomfortable with the unusual absence of people on the streets associated with quarantine restrictions); domestic and organizational stress (negative feelings and discomfort from the closure of transport traffic or shops and kindergartens attended by their children); abstract experiences (concerns about the country and the population as a whole). 3. The complex of COVID-19 pandemic- and quarantine-related stressful factors in military personnel differs from those in civilians.

4. The identified factors can be used as preventive targets for psychological prophylaxis.

Conflicts of interest: author has no conflict of interest to declare. Конфлікт інтересів: відсутній.

Надійшла до редакції / Received: 21.09.2021 Після доопрацювання / Revised: 11.10.2021 Прийнято до друку / Accepted: 27.10.2021

Information about author:

Danilevska N. V., MD, PhD, Assistant of the Department of Psychiatry, Psychotherapy, General and Medical Psychology, Narcology and Sexology, Zaporizhzhia State Medical University, Ukraine.

ORCID ID: 0000-0002-7854-9007

Відомості про автора:

Данілевська Н. В., канд. мед. наук, асистент каф. психіатрії, психотерапії, загальної та медичної психології, наркології та сексології, Запорізький державний медичний університет, Україна.

Сведения об авторе:

Данилевская Н. В., канд. мед. наук, ассистент каф. психиатрии, психотерапии, общей и медицинской психологии, наркологии и сексологии, Запорожский государственный медицинский университет, Украина.

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