UDC 616.98:578.834]–036.21:616–051:613.86 https://doi.org/10.26641/2307-0404.2020.4.221224

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MENTAL HEALTH CARE OF MEDICAL WORKERS DURING COVID-19 PANDEMIC

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Цитування: Медичні перспективи. 2020. Т. 25, № 4. С. 12-21
Cited: Medicni perspektivi. 2020;25(4):12-21

Key words: *mental health, medical workers, COVID-19, SARS-CoV-2, 2019-nCoV*
Ключові слова: *психічне здоров'я, медичні працівники, COVID-19, SARS-CoV-2, 2019-nCoV*
Ключевые слова: *психическое здоровье, медицинские работники, COVID-19, SARS-CoV-2, 2019-nCoV*

Abstract. Mental health care of medical workers during COVID-19 pandemic. Yuryeva L.M. *During the pandemic caused by the SARS-CoV-2 virus, healthcare workers are at the forefront of the battle undergoing not only significant physical but also emotional stress. At the same time medical workers are considered to be at high risk for the incidence of COVID-19. Staying in a state of constant emotional stress over time leads to the emergence of both mental and somatic disorders. The purpose of this article is to conduct a literature review on the principles of consistency regarding the mental health of staff members of medical institutions providing care to patients with COVID-19. A systematic literature search has been carried out, as a result of which 32 articles with reports of mental and behavioral disorders during the pandemic have been selected for analysis. The main group of disorders are disorders of the anxious-depressive spectrum. According to various sources, from a quarter to a third of medical workers have clinically significant anxiety, about a third – depression. Significant prevalence of sleep disorders in individuals providing medical care to patients with COVID-19 has also been indicated. In the long term, the expectation of an increase in the level of post-traumatic stress disorder has been indicated. The article also provides modern views on the socio-psychological effects of epidemics and pandemics. Excessive attention, especially on social media devoted to the problem of COVID-19 significantly complicates the fight against the real problem of overcoming the pandemic. It has been proven that overconcentration of attention on problems associated with COVID-19 is a factor of the increased risk of developing generalized anxiety disorder. Thus, the protection of mental health and the socio-psychological support of medical workers are some of the important directions in the fight against the coronavirus pandemic. The management of psychological crises during pandemics should be based on psycho-hygienic and psycho-preventive measures both at the level of the individual and society as a whole.*

Реферат. Охрана психического здоровья медицинских работников в условиях пандемии COVID-19. Юрьева Л.Н. *Во время пандемии, вызванной вирусом SARS-CoV-2, на передовой борьбы находятся работники учреждений здравоохранения, на которых ложится не только значительная физическая, но и эмоциональная нагрузка. При этом медицинские работники относятся к группе высокого риска заболеваемости COVID-19. Пребывание в состоянии постоянного эмоционального стресса со временем приводит к возникновению как психических, так и соматических расстройств. Целью данной статьи является проведение обзора литературы на принципах системности относительно психического здоровья работников медицинских учреждений, оказывающих помощь пациентам с COVID-19. Проведен систематический поиск литературы, в результате которого для анализа было отобрано 32 статьи с сообщениями о психических и поведенческих расстройствах во время пандемии. Основную группу расстройств составляют расстройства тревожно-депрессивного спектра. По разным данным, от четверти до трети медицинских работников имеют клинически значимую тревогу, около трети – депрессию. Также указывается на значительную распространенность расстройств сна у лиц, оказывающих медицинскую помощь больным с COVID-19. В долгосрочной перспективе указано на ожидание роста уровня посттравматического стрессового расстройства. Также в статье приводятся современные взгляды на социально-психологические эффекты эпидемий и пандемий. Уделение чрезмерного внимания, особенно в социальных сетях, проблеме COVID-19 существенно усложняет борьбу с реальной проблемой преодоления пандемии. Доказано, что сверхконцентрация внимания на проблемах, связанных с COVID-19, является фактором повышенного риска развития*

генерализованного тревожного расстройства. Таким образом, охрана психического здоровья и социально-психологическая поддержка медицинских работников являются одними из важных направлений борьбы с пандемией коронавирусной болезни. Управление психологическими кризисами во время пандемий должно опираться на психогигиенические и психопрофилактические меры как на уровне индивида, так и на уровне общества в целом.

Medical personnel is one of the key resources of the state in a pandemic situation. Information on the mental and psychological condition of health workers involved in the eradication of coronavirus disease caused by the SARS-CoV-2 virus suggests that these effects may lead to hazards that outweigh the effects of the pandemic itself. Therefore, maintaining the physical and mental health of staff is very important to combat the pandemic [18, 35].

Healthcare workers belong to the group with the highest risk of COVID-19. During February-April 2020, in the United States, 19% (9282 people) of all patients with COVID-19 were health workers, 27 (0.3%) people died [7]. As of June 14, 2020, 76,395 medical workers have already fallen ill in the United States, of which 407 have died [5].

In Wuhan, COVID-19 was confirmed in 1,496 medical workers, which accounted for 4.6% of all cases of coronavirus infection. The confirmed daily morbidity rate of health workers during the whole period in Wuhan was 130.5 cases per million people (95% CI, 123.9–137.2) [3].

As of April 3, 2020, 3,387 health care workers fell ill with COVID-19 in China, and 23 (0.7%) of them died [9].

In Italy, as of April 3, 2020, about 10,000 health workers were infected and 74 died.

Excessive mental strain on health workers who are at the site of a pandemic outbreak and have an increased risk of infection and psychological trauma while caring for infected patients has both short-term and long-term consequences for mental health and psychological well-being.

MATERIALS AND METHODS OF RESEARCH

A systematic review to determine the current state of mental health in the COVID-19 pandemic was conducted. The search was conducted in electronic databases (PubMed, Medline and Web of Science) (reference date June 1, 2020) among published peer-reviewed articles using a combination of the following keywords: “mental health”, “medical workers”, “health care personnel”, and “COVID-19”, “SARS-CoV-2”, “2019-nCoV” without restrictions on the date of publication or language of the article.

To be included in the review, the articles had to meet the following criteria: to describe the mental pathology (in terms and definitions of ICD-10 revision or DSM-5) of health care workers during the COVID-19 pandemic participated in the provision of medical care for such patients. Additionally, mental health reviews after outbreaks of severe acute respiratory syndrome (SARS) in 2003 and Ebola in 2014 were included. The exclusion criteria were the lack of own research, the presence of disorders in persons who did not directly provided medical care to persons with COVID-19, the reporting of clinical cases.

As a result of the search, a total of 82 works were obtained, the abstracts of which were checked for compliance with the inclusion criteria. In total, we reviewed 61 full-text articles, 32 of which were included in the final review (Fig. 1).

The vast majority of articles (n=20) are devoted to the study of the mental health of health care workers in the People's Republic of China, significantly fewer (5 articles) to medical professionals in the United States, and no work concerning physicians of the East-European region, which is associated with both the time of the outbreak of the epidemic and the scale of the staff involved due to the significant number of inpatients.

RESULTS AND DISCUSSION

Among 5062 of health care professionals caring for critically ill patients with COVID-19 in Wuhan, 29.8% showed signs of stress, 24.1% showed signs of anxiety, and 13.5% showed signs of depression [8]. The prevalence of post-traumatic stress disorder (PTSD) among health care professionals in such situations can reach 20 percent, as it was during the outbreak of severe acute respiratory syndrome (SARS) in 2003 [4].

It should be noted that studies of the psychological and mental state of health care workers caring for patients with the Ebola virus in 2014 also revealed a number of mental and behavioral disorders, the most common of which were anxiety, depressive and post-traumatic stress disorders [29].

According to an online cross-section of 7,236 volunteers, Chinese researchers assessed the mental health of various segments of the population during the COVID-19 pandemic. Compared with other professional groups, medical workers were found to have the highest level of poor sleep quality [13]. Insomnia is often one of the manifestations of anxiety and depressive disorders. It is also one of the main risk factors for PTSD [24].

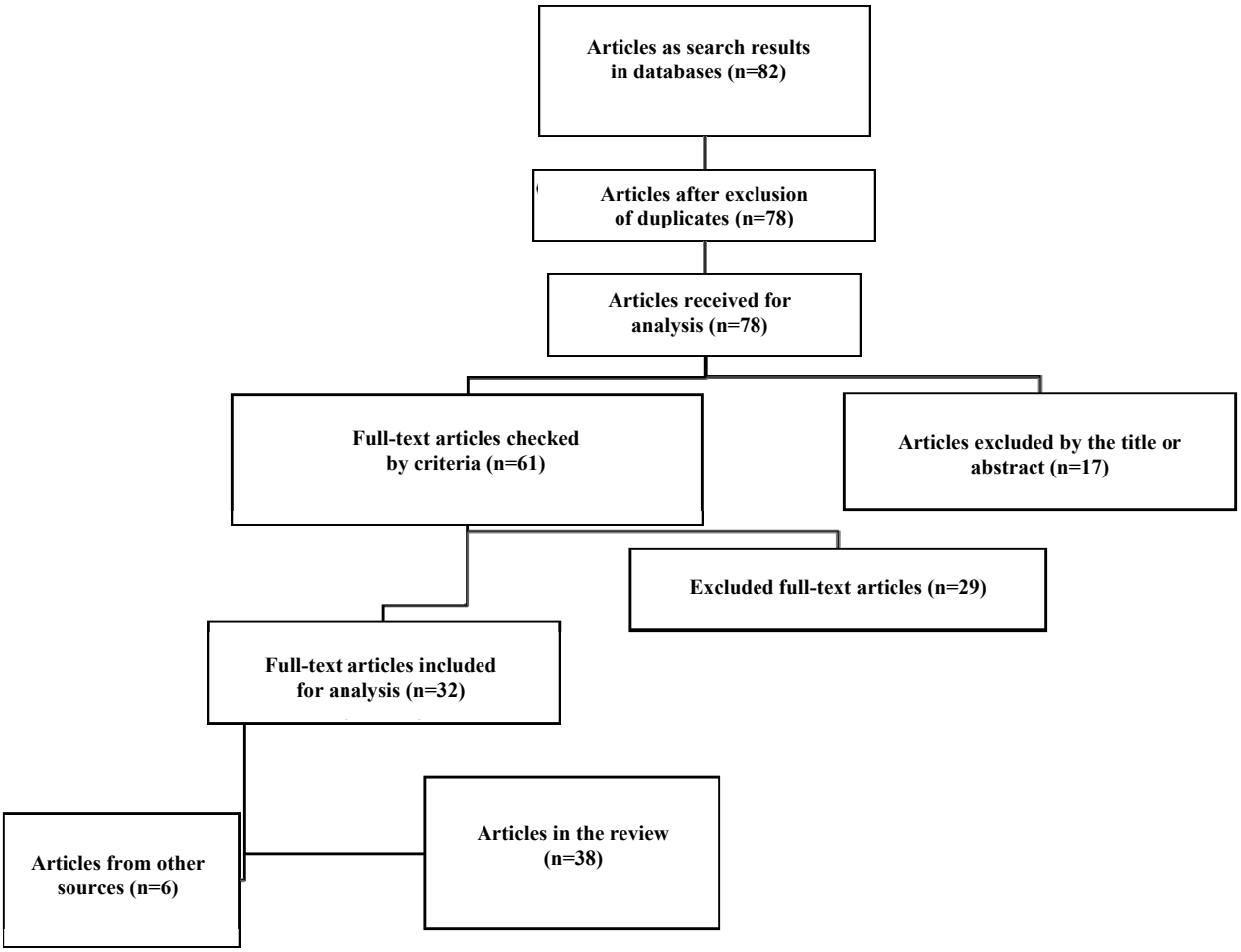

Fig. 1. Scheme and algorithm of literary search

Health workers in Wuhan faced a high risk of infection and insufficient protection against COVID-19 infection. In a recent study, 85.37% of nurses directly involved in the care of patients with COVID-19 had emotional reactions (anger, anxiety, depressive states). They experienced frustration, discrimination, negative emotions to patients, isolation, fatigue and exhaustion. They had no contact with their families.

An important factor in the mental maladaptation of health workers is the factor of the psychological impact of the COVID-19 epidemic on their family members. A study of their health in Ningbo and China during the COVID-19 outbreak revealed that the overall prevalence of anxiety and depressive symptoms in relatives of health workers was 33.73% and 29.35%, respectively. The most vulnerable to mental disorders were parents and close relatives [20].

This situation caused mental problems such as stress, anxiety, depressive symptoms, insomnia, denial, anger and fear. These mental health problems not only affect the attention, understanding, and ability of health care providers to make decisions that may interfere with the fight against SARS-CoV-2 but can also have a long-term effect on their overall well-being. Protecting their mental health is important to combat the epidemic and the state of their own health in the long run [32].

It should be noted that the mental state of health workers after the end of the epidemics for years requires psychological intervention and psychiatric correction. One year after the outbreak of the SARS epidemic in 2003, health workers in China experienced higher levels of stress than recovering patients [30]. Similar results have been reported in other studies [4, 14, 15]. In 2006, randomly selected staff (N=549) at a Beijing hospital were interviewed

about their mental health after an outbreak of SARS in 2003. The results of the analysis showed that 3 years later the probability of having a high level of depressive symptoms increased. It was found that altruistic risk-taking during an outbreak reduced the likelihood of high levels of depressive symptoms after an outbreak [10]. Like the general population, health workers are experiencing the socio-psychological consequences of a pandemic that pose risks to their psychological well-being and mental health.

Socio-psychological effects of pandemics

1. Modern infectious pandemics are accompanied by non-infectious mental epidemics, which are caused by the impact of the media and social networks on the mental health of the population. Director-General of the World Health Organization (WHO) T.A. Gebreisus officially acknowledged the existence of the "infodemia" and called for its fight, as it significantly complicates the fight against the real problem of overcoming the COVID-19 pandemic [38]. During a pandemic, fear and anxiety are an integral part of a person's mental state [1].

Already during the H1N1 flu pandemic in 2009, a simultaneous emotional pandemic was recorded and for the first time the concept of "emotional epidemiology" was introduced into the scientific lexicon [22]. Editor-in-Chief of “Current Psychiatry” Journal H.A. Nasrallah believes that "a viral pandemic has caused a parallel epidemic of anxiety."

Chinese researchers have assessed the link between mental health problems and the impact of social media during the COVID-19 pandemic. An online survey of 4,872 people over the age of 18 from 31 provinces and autonomous regions was used to assess mental status. The prevalence of depression, anxiety, and the combination of depression and anxiety was 48.3%. More than 80% of participants reported that they often fell under influence of social networks [19].

A cross-sectional study of 7,236 Chinese volunteers found that staying online for more than 3 hours a day and focusing on COVID-19 issues was a high risk factor for generalized anxiety disorder.

2. Quarantine, social distancing and social isolation.

Prolonged isolation and separation from family and society has a negative impact on mental health and physical well-being. Among the problems that arise in quarantine, the most pathogenic for mental health are the presence of unorganized free time; sensory deprivation and restriction of space, reduction of motor activity; constant interaction with a limited number of people (often with one person).

There are reports that social distancing can further aggravate anxiety and depression [21].

The impact of quarantine on the mental state of health workers was studied during the SARS outbreak in 2003. Quarantine was found to be a harbinger of PTSD for three years. Healthcare workers were diagnosed with more severe symptoms of PTSD than the general population. Being under quarantine positively correlates with alcohol abuse, addiction symptoms, and avoidance behavior 3 years after quarantine. Health workers also felt more stigmatized than the population, showed more avoidance behavior, reported more lost income, and were constantly traumatized [28, 33].

3. Stigmatization. This is a typical psychological response to the threat of infection, which is a manifestation of obsessive fears of infection and death. Stigmatization spills over to people with signs of respiratory infection and their environment, to those who have come from other countries and other groups of people. An increase in infection-related stigma has been reported in many previous epidemics and pandemics [2, 6, 11].

Healthcare workers can also suffer from both external stigma and self-stigma. External stigma is associated with people's fear of contact with those treating patients with COVID-19. Self-stigmatization of medical workers is a manifestation of their unmet needs and fears. It can also be the result of vicarious trauma [36].

The President of the International Committee of the Red Cross Peter Maurer at a meeting of the UN Security Council on May 27, 2020 said that during the pandemic from March 13, 2020 in 13 countries there were recorded 208 attacks on health workers and medical institutions providing care to patients with COVID-19. Physical assaults accounted for 23%, discrimination with nonverbal and verbal aggression – 20%, intentional non-provision or refusal to provide assistance, verbal aggression, disregard for the protection of medical personnel and intentional failure to provide protection – 57% of cases [16].

In a pandemic, the problem of stigma is not just an ethical issue. It creates additional fears in genuine COVID-19 carriers and prevents them from reporting their health and receiving timely medical care in a timely manner. The combination of anxiety and phobias with stigmatization and lack of faith in the health care system has created a typical behavioral scenario of avoiding COVID-19 testing by at-risk groups and concealing disease symptoms. Such a behavioral scenario contributes to the spread of the pandemic.

WHO experts in the recommendations "Mental health and psychosocial considerations during the outbreak of COVID-19" [17] pay special attention to the problem of destigmatization.

4. Unusual condition of medical institutions and medical workers who, in the midst of a pandemic are unable to provide care to all patients put in doubt public confidence in the health care system and its ability to respond to outbreaks. 33% of Canadians and 26% of U.S. respondents were unsure that their country's health care system was ready to deal with new cases of COVID-19. This situation can cause stress disorders and other mental health reactions to a potential catastrophe and can provoke individual and mass panic. A moral and ethical dilemma arises, described by the English philosopher Philippa Foot as the problem of the "trolley", the problem of choice. In the situation of COVID-19 the most common choice: whom is to put in the intensive care unit and give a chance to survive, and whom is not.

Specific sources of stress for healthcare professionals treating patients with COVID-19:

1. The need for using strict measures of biological security:

a) bodily discomfort and stress when constantly wearing special clothing and protective equipment;

b) physical isolation (restrictions of physical contacts, even after a working day);

c) constant awareness and vigilance regarding infection control procedures;

d) strict adherence to the protocol of medical procedures, lack of spontaneity.

2. Factors associated with the risk of disease transmission:

a) constant infection control which can be a very stressful event, as the usual symptoms of flu and cold are taken for COVID-19 until the test results come;

b) contradiction between the priorities of public health and the wishes of patients and their families regarding quarantine.

3. Psychological and personal problems:

a) fear of infection and occupational risk;

b) excessive manifestations of identification and countertransference;

c) internal conflict between competing work and family needs that is exacerbated by the likelihood of infecting family with COVID-19.

4. Specific working conditions:

a) constant daily overload, unpredictable number of new patients and emergencies, lack of sleep;

b) constant monitoring of the deterioration of the physical and mental condition of patients, their death which leads to vicarious (secondary) trauma;

c) stigmatization.

Medical personnel working in a pandemic have a very high level of professional burnout. On the one hand, the emotional burnout syndrome is a certain type of response to chronic occupational stress, which allows a person to dose and economically expend energy resources. On the other hand, the resulting somatic, psychological and psychopathological phenomena have adverse effects on health and professional activity of the specialist. Prevention of burnout is one of the resources to strengthen the mental health of medical workers in a pandemic situation [37].

Management of psychological crises during the COVID-19 pandemic

The following strategic areas of mental health promotion during the COVID-19 outbreak are identified:

1) identification of high-risk groups;

2) screening for mental disorders;

3) psychological interventions, which are selected according to the screening data;

4) support for the medical staff involved in the COVID-19 outbreak;

5) providing accurate and complete information;

6) integration of medical and public resources [12].

The high contagiousness of COVID-19 prevents the provision of crisis psychological and psychiatric care offline. Popularization of Internet services and smartphones and the advent of fifth-generation (5G) mobile networks have allowed mental health professionals and health authorities to provide online services during the COVID-19 outbreak. To date, several types of online mental health services are widely used in China.

Classical psychotherapeutic and psychological interventions aimed at correcting the mental state of health workers in a situation of pandemic outbreaks in most cases are little feasible. The implementation of psychological intervention among Chinese hospital health workers during 2003 SARS epidemic ran into obstacles. They were reluctant to participate in group or individual psychological sessions. Some nurses showed signs of psychological distress, irritability, anxiety, unwillingness to rest. They refused any psychological help and stated that they had no problems [34]. High levels of traumatic stress reactions, including

depression, anxiety, hostility, and somatization symptoms were found in 11% of cases [25].

To more effectively address the urgent psychological problems of people involved in the COVID-19 epidemic, Chinese researchers have developed a new model of psychological crisis intervention using Internet technologies (Fig. 2). This model brings together doctors, psychiatrists, psychologists and social workers in an online platform for psychological intervention in relation to patients, their families and medical staff [23, 26].

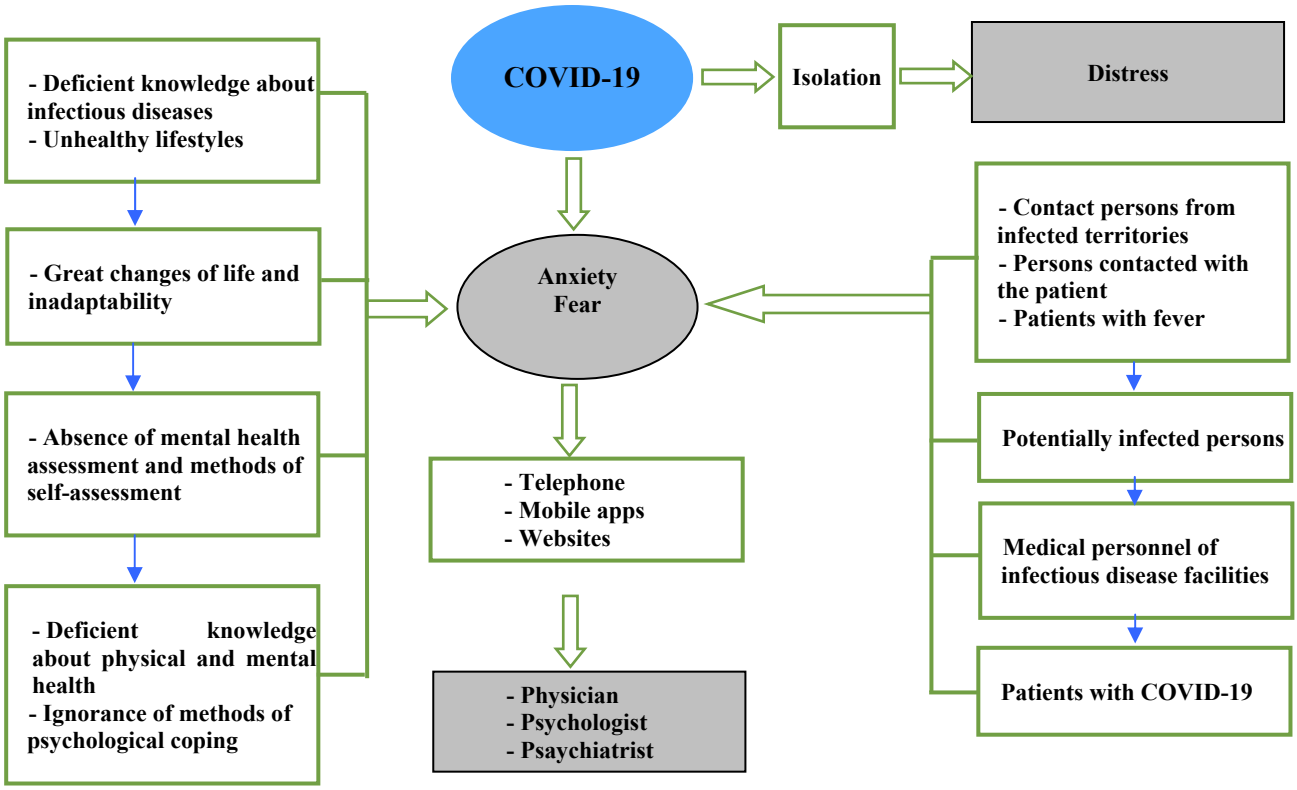

Fig. 2. Model of psychological crisis intervention

It is a comprehensive system for responding to psychological crises, which allows you to provide mental health services online. The menu of these services includes an online survey on the state of mental health associated with the COVID-19 outbreak; online mental health education during pandemics; online psychological counseling and intervention services for self-help, including cognitive-behavioral therapy for depressive, anxiety, stress disorders and insomnia.

Health workers are a special group that needs a lot of social support, being an important force in providing social support to patients as well. To ensure their continued effective performance, their mental health should be monitored and continuous timely assistance should be provided to support them. A step-by-step model of stress management for health professionals was developed. The Anticipated, Plan and Deter (APD): anticipate, plan, deter [26]:

Anticipate – undergo stress-training before the event; understand stress management; to express images that characterize probable catastrophic reactions to the event.

Plan – develop an individual plan of resilience (recovery from psychological problems); find individual or group coping resources.

Deter – learn to use an individual resilience plan and monitor stress levels.

After the outbreak of the epidemic, psychosocial support is mainly focused on quarantined persons and medical staff (Fig. 3). Social support and psychological intervention are mainly provided through a hotline and the Internet (for example, WeChat or other mobile applications) [26].

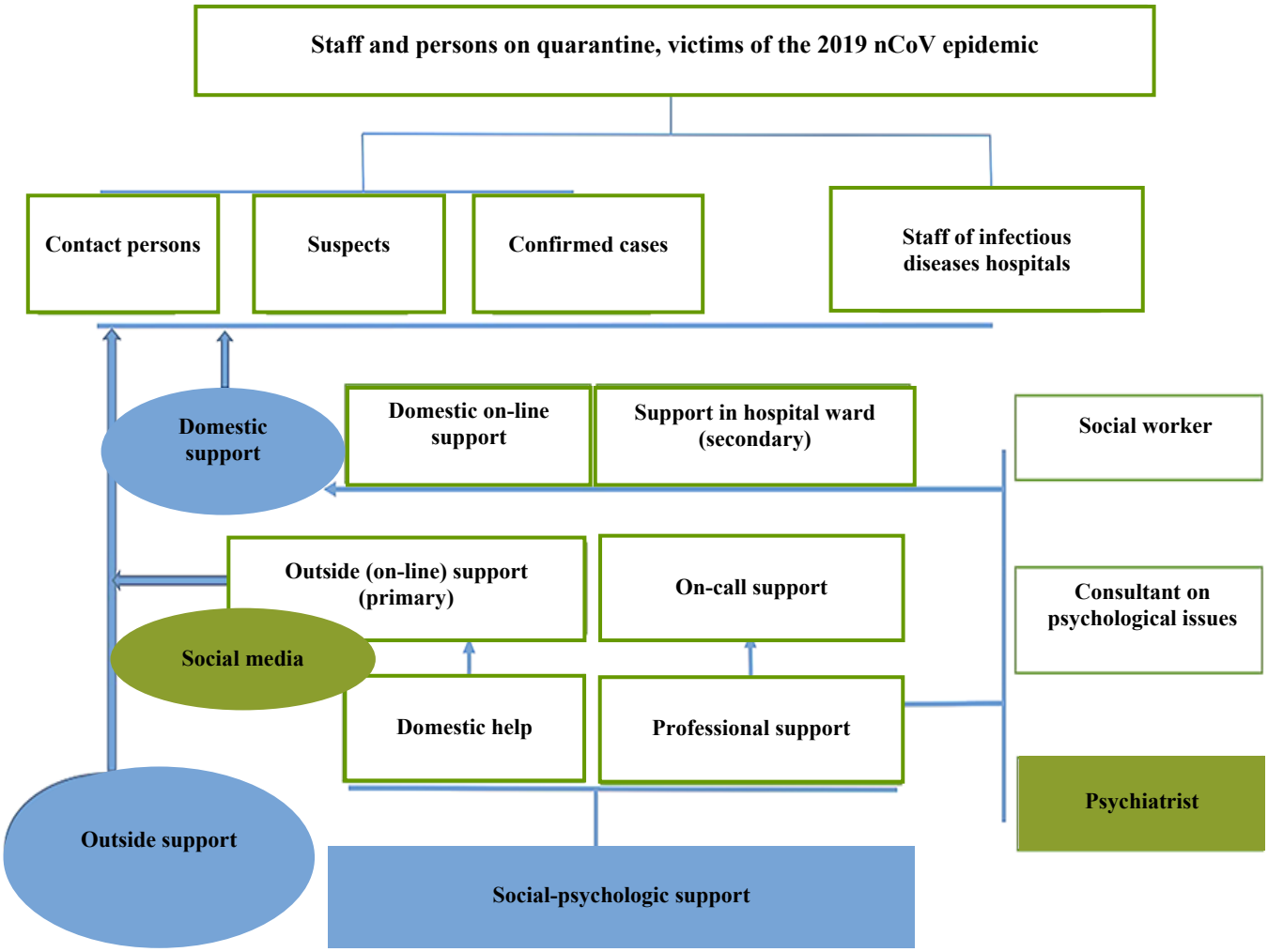

Fig. 3. Socio-psychological online support of the population and staff in quarantine

CONCLUSIONS

1. The data of the conducted scientific and theoretical analysis of the state of mental health of employees of medical institutions that provide care to patients with COVID-19 indicate a significant prevalence of anxiety and depressive disorders and sleep disorders, which is a risk factor for psychosomatic and post-traumatic stress disorder. The influence of socio-psychological and specific for health workers stressors is significant and requires the use of modern Internet technologies of socio-psychological crisis intervention.

2. Thus, the protection of mental health and socio-psychological support of health workers is one of the important areas in the fight against the coronavirus pandemic. Management of psychological crises during pandemics should be based on psycho-hygienic and psycho-preventive measures both at the level of the individual and at the level of society as a whole.

Conflict of interests. The authors declare no conflict of interest.

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The article was received
2020.06.15