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Impact of COVID-19 pandemic on mental health

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Summary

Human confrontation with such a stressor as the COVID-19 pandemic outbreak, caused by SARS-CoV-2 virus, manifested in severe acute respiratory distress, results also in the decrease of fitness and mental resistance on an unprecedented scale and with difficult to estimate consequences [1]. More important than the intensity of the disorder is its prevalence. When we compare our current knowledge of the impact of the pandemic on the development of mental disorders with the findings of research on acute stress disorder (ASD) and post-traumatic stress disorder (PTSD) over the last 40 years, it may turn out that they are different from each other, the symptomatic spectrum of mental disorders varies and the possibilities of an effective treatment are very limited. We cannot rule out that a new diagnostic category for specific mental disorders resulting from the COVID-19 pandemic may emerge in the near future. This paper presents the extent of the impact of the pandemic on the development of mental instability and current diagnostic possibilities. Subpopulations necessary for planning short-term intervention in the organizational, informative and medical areas were identified. A psychiatric guide for immediate support and assistance was proposed.

Key words: COVID-19, mental health, stress disorder

Introduction

Infectious diseases transmitted from man to man are nothing unusual and have accompanied humanity for centuries. Their occurrence has triggered specific psychological reactions of whole communities, changed their behavior, habits and introduced various, more or less effective ways of fighting the effects of the plague. The scales of the plague epidemic decimated the world for centuries. It is estimated that the plague that broke out in 542 in the capital of the Eastern Empire, Constantinople, caused the deaths of over 300,000 of its citizens. From there, the plague spread to other areas of Europe, North Africa and Asia. This global range of the pandemic could cause the death of up to 100 million people [2]. From the Ancient to the Middle Ages, the cause of the

epidemic was not considered to be a fatal state of hygiene, but contaminated air that was hard to avoid. Due to high mortality rates, outbreaks of epidemics were invariably associated with states of panic and a sense of threat to individual safety. The common health consequences of epidemics were described in the literature, including anxiety, insomnia, increased alcohol consumption, and energy loss [3]. The psychological and psychiatric consequences of the epidemic in our times, with the unprecedented acceleration of virus transmission worldwide as a result of globalization, climate change and the speed of population movement, draw attention to the dominant, subjectively perceived, real or perceived sense of threat coming from the other people, fear, uncertainty and anxiety, and also to those individual symptoms that are included in the scope of reactions to traumatic stress. In addition, there may be unfavorable states of social phobia as a result of becoming a victim of stigmatization, social stigma and xenophobia. This applies to people of Asian origin, but also to those who are suspected of being more likely to transmit the infection, e.g., healthcare workers, people being in the quarantine, coming back from abroad, suffering from allergic disorders, having cough etc. [4]. Looking for the possibility of assigning pandemic mental disorders to some category of disorders, we naturally turn towards anxiety and stress-related disorders.

The diagnosis of acute stress disorder appeared in the DSM-IV classification of the American Psychiatric Association (1994) as filling the so-called 'nosological gap' between adjustment disorder and posttraumatic stress disorder (PTSD) [5]. Later nosological discussions tried to differentiate the longer lasting psychopathological states after the injury from "a normal reaction to a traumatic event". There was a fear of excessive recognition of natural defensive reactions as pathological and increased risk of false positive diagnoses [5]. All these considerations were based on the assumption that the reaction to trauma is temporary. At the same time, the diagnostic criteria of acute stress disorder (ASD; mapped on the previously described diagnosis of PTSD), by persisting symptoms lasting for more than a month, excluded the diagnosis of adjustment disorder and did not yet meet the PTSD criteria [6]. It should be noted that the definition of acute stress reaction included in ICD-10 differs from the definition of acute stress disorder according to DSM-IV and DSM-5 as regards the duration of the reaction – in ICD-10 it does not exceed 48 hours.

Today's considerations about the appearance of ASD symptoms in a pandemic population are difficult. There are no previous empirical studies and conclusions are mainly based on logical arguments. There is no doubt that the whole population is confronted with the pandemic, but it is not possible or necessary to diagnose the ASD symptoms in all people. We are only at the beginning of research, which will inevitably be carried out and will provide reliable data in some time. Despite the highest level of distress, it seems that the revealed symptoms of ASD will not cover more than 20% of the population. This is an indirectly retrospective conclusion, drawn from the occurrence of PTSD symptoms after trauma in those who previously met the criteria for

acute stress disorder. It can be assumed that among those who are unable to cope with trauma and who later reveal severe symptoms, there will be those who are deprived of natural protective mechanisms associated with lack of social support, affected by other mental and somatic disorders, previous traumas, at risk of lack of access to reliable information, deprived of rational crisis management by public services.

Diagnosis of mental health disorders

The symptoms described in the diagnostic criteria for post-traumatic and stress factor related disorders usually included those reserved for acute stress disorder (308.3 in DSM-5 and F43.1 in ICD-10). Currently, at the turn of 2019 and 2020, after several months of confrontation with the pandemic and based on the psychological consequences of COVID-19, we can conclude that they are not strictly identical to the diagnosis of acute stress disorder included both in DSM-5 and ICD-10/ICD11 classifications [7, 8]. The fundamental difference concerns both the time of exposure to trauma and the duration of symptoms. In the case of the COVID-19 pandemic, the time of exposure to the stressor cannot be determined, and the havoc caused in the mental sphere is not a short-term reaction. Today, it cannot be said much about the long-term consequences of exposure to the pandemic trauma (PTSD). At present, it is too early to make a precise diagnosis of PTSD while the stressor is underway. From the perspective of an ongoing pandemic, mental disorders that are revealed and which are directly related to the pandemic are mostly manifested by a state of anxiety, panic, obsessive disorders related to the reasoned recommendations of washing, disinfection and sterility, which can get into an exaggerated and harmful form. We can observe the tendencies to self-observation of the body, in particular, to analyze coughing, dyspnea, to permanent checking of the body temperature, being the subject to harmful 'health' advice from quacks and pseudo-doctors. In extreme cases, especially in people who have been previously mentally unstable, subject to social disinformation, we may encounter exacerbations of psychosis and even shared psychosis (*Folie à deux*) [4]. It cannot be ruled out that people with a positive coronavirus test result, sick, quarantined, and their families will develop symptoms of acute stress disorder (308.3, DSM-5) having the distress nature, where:

- the trigger factor is a unique, over-regional biological stressor, confronting everyone with death, against which the defense mechanisms used so far have failed; the global nature of the stressor has effects on the existence of mankind around the world; it goes beyond what has been conceived of as a natural or man-made disaster;
- the destructive nature of staying in a state of distress is particularly intense when the stressor is of a chronic nature and does not disappear, there is no certainty as to its continuation, subclinical symptoms, recurrence, and an ad-

ditional burden is the knowledge of the lack of effective treatment of the occurring disease;
- regardless of the duration of the stressor (sudden or prolonged in time), the psychophysical distress response is destructive;
- as a result of the coronavirus, everything that was constant and predictable in the rational shaping of existence has become uncertain, and what once had meaning has become completely useless (including previous therapeutic experiences).

Diagnostic criteria for pandemic acute stress disorder

A pandemic (in response to a pandemic) acute stress disorder, although it is an unavoidable escape and defense response, may be causally linked to either a sudden stressor with unimaginable consequences or a stressor triggering an cascade of events leading to progressive destruction which the individual is unable to stop, cannot resist or escape from. The diagnostic criteria for a pandemic acute stress disorder can be largely mapped from the diagnosis of an acute stress disorder. The descriptive presentation of the stressor's influence and its consequences in the form of symptoms allows for characterizing the group exposed to and affected by the trauma. The population nature of exposure to the direct traumatic experience covers entire communities affected by the pandemic. The scale of the painful experience varies from becoming a victim of an infection with an immediate threat to life, being a direct witness of such an event, remaining in a group at particular risk as a result of contact with the infection with a number of epidemic consequences (staying in quarantine), confronting information about death or the threat of death among the closest people. The area of traumatic experiences also includes prolonged exposure to the consequences of commonly introduced sanitary-epidemic regulations limiting freedom of action, access to the goods, existential possibilities or medical support in non-pandemic diseases. Limiting of the personal therapeutic and psychotherapeutic contact for people suffering from primary mental disorders is also important. Although according to the DSM-5 criteria, the diagnosis of acute stress disorder does not take into account exposure via electronic media, this impact on the perpetuation and aggravation of the existing traumatic conditions cannot be ignored. Increased levels of anxiety may result from sensational disinformation transmitted via social media [9, 10].

The most typical and common feature of the clinical picture of pandemic acute stress disorder is prolonged anxiety reaction and inability to break away from permanent trauma. We observe an extended period of fear and a sense of helplessness, and in the face of inability to escape (lack of a safe place or it is limited and inaccessible) – in extreme cases, states of panic, despair and hopelessness. A common experience is: a defensive-mobilization type reaction, manifested by excessive vigilance, motor anxi-

ety, attention focused on the only one problem – epidemics; fear of infecting oneself and one's family; increased readiness for aggressive behavior (increased vigilance and reacting aggressively to neutral stimuli), anger and verbalized aggression; inappropriate and nondeliberate activity; inability to come to terms with the loss of one's lifestyle, values and goods; fear of losing the basis of existence due to limited possibilities of earning money; faster growing mental fatigue. Classified symptoms in a pandemic acute stress disorder fall into individual categories of obsession, reduced mood, dissociative symptoms, avoidance symptoms, excessive excitability.

The obsessive symptoms include: recurring memories of epidemic threats in the form of obsessive personal memories and transmitted through electronic media; recurring nightmares related to the epidemic; repetitive dissociative reactions associated with a sense of unreality of the threat that has completely changed the status of the person, the rhythm of everyday life and plans for the future; a persistent sense of harm and suffering. This area includes an intrusive following of media information about the epidemic as well as obsessive (often inappropriate and ineffective) use of hygienic procedures [9, 10].

The symptoms of mood disorders are mainly manifested in sadness, inability to express joy, satisfaction, inability to express positive feelings. However, prolonged exposure may induce the appearance of depressive disorder spectrum. A poor general medical condition associated with difficulties in the treatment of pre-existing somatic conditions, a perceived threat of viral infection for people at risk (those in quarantine, working with higher than average risk of contact with infected people) may affect the increased risk of suicidal thoughts, self-destructive behavior and suicides. It cannot be ruled out that there will occur an increased susceptibility to psychotic disorders associated with poor general medical condition (293.81 according to DSM-5, F06.2 according to ICD-10) [5, 6]. It seems that one of the most troublesome problems will be a disruptive mood dysregulation disorder (296.99 according to DSM-5, F34.8 according to ICD-10). In the diagnostic criteria of this disorder we will identify severe and recurring outbursts of anger shown verbally and through behavior and between them there will be chronic irritable moods that persist for most of the day on almost daily basis. In the group of people not affected by the poor general medical condition, we can expect episodes of a major depressive disorder lasting for at least 2 weeks. With symptoms of decreased mood (sadness, feeling of emptiness, lack of hope) or loss of interest and anhedonia revealed in the form of subjective complaints, necessary to diagnose this condition, there may occur significant changes in appetite and body weight (exceeding 5% per month), almost permanent insomnia or excessive sleepiness, slowing down or agitation, fatigue or lack of energy, lack of self-esteem, inadequate guilt, reduced ability to think or concentrate, recurring thoughts of death exceeding the fear of death, recurring suicidal thoughts without a specific plan. The above symptoms are associated with experiencing a state of suffering and impairment of social and professional functioning as well as economic and existential threat.

The dissociative symptoms are the dominant increase in the sense of unreality and uncertainty of identity, based on the principle of denial "it could not happen, it cannot concern me". At the same time, a sense of dazzlement may appear as well as the symptoms of distorted perception (illusions and pseudo-hallucinations associated with excessive vigilance towards the environment and the presumption of the source of infection), a sense of passage of time slowing down and difficulties in remembering certain aspects of traumatic events (dissociative amnesia).

Avoidance symptoms, as an attempt to release from the traumatic burden, are an escape from distressing thoughts, feelings and memories about the pandemic and its effects as well as people and situations evoking distressing thoughts, feelings and memories.

Symptoms of hyperactivity appear to be the most common burden among the pandemic population revealed in the form of complaints to the medical services. They will be typical for both direct and indirect victims of the pandemic, as well as for the medical and sanitary services, teams managing social, economic and informational processes. The main symptoms we encounter here are: sleep disorders (difficulty in falling asleep, waking up at night, lack of feeling of rest after sleep); unprovoked irritation and anger outbursts (verbal aggression and aggressive behavior directed towards other people or objects); excessive vigilance; difficulties in concentration and focus; increased reactivity to external stimuli [3].

The above-mentioned diagnostic criteria of acute stress disorder may be supplemented with features specific to the COVID-19 pandemic, but they will still remain in the diagnostic area of anxiety and stress-related disorders. While it can be accepted that a descriptive diagnosis of pandemic acute stress disorder can be made almost immediately after exposure to a traumatic event, there will be some doubt about the persistence of symptoms between 3 days and one month. The observations made today show that this time may be longer, and the development of PTSD symptoms may also occur after the direct impact of the event has subsided, not during its duration [6].

Today we are confronted with a new and unknown phenomenon, being aware that the use of our current knowledge may not give the expected results. The cause of such diagnostic and therapeutic skepticism is primarily the scale of the pandemic, its rate of spread, high mortality, and lack of unequivocally effective treatment methods. Previous definitions of a posttraumatic stress disorders, although they tended to sharpen the criteria for the diagnosis of ASD and PTSD, generally assumed that the effect of a stressor is somehow limited in time, coverage and population affected. Although in the case of COVID-19 we have a direct confrontation with death as an operational condition for diagnosis, there are no restrictions or boundary conditions on the spread and duration of the pandemic. All the posttraumatic syndromes mentioned earlier in the diagnosis of mental disorders assumed that the most important form of the first intervention in an emergency is to remove the person from the danger area and place

them in a safe place. In the case of a pandemic, there is really no such a place where it would be possible to hide safely and eliminate human contact completely. One could say that total territorial security does not exist. The coronavirus pandemic develops over time. Time plays an extremely important role here. It is accompanied by a sense of uncertainty and existential threat. While the awareness of the pathogenicity of post-infection disorders becomes something permanent and in a certain sense accepted (as the so-called 'act of God'), there remains uncertainty as to when we will confront it directly. We can be asymptomatic and passive carriers, sick or indirectly suffering when the disease affects those closest to us, even if only known personally, and there are victims among them. The dimension of the pandemic duration is still undefined as for today. No one can say that it will end in months, a year or years. We do not know if the virus does not undergo another mutation, hit again, also those who today, going through the infection asymptomaticly, have acquired a trace of immunity, which will prove ineffective. The previous catastrophic experiences of humanity gave this hope that they were transient. They started and ended somewhere in the time line. Today the situation is somewhat different. The effects of globalization and migration closely correspond to time, and the pandemic can come full circle, to a smaller or larger extent. Our knowledge today is greater and even such an eventuality must be considered.

Areas of intervention

The impact of the pandemic on the mental state of the population can be precisely determined. This is essential for planning short and long term interventions in the following areas:

- organizational;
- informative;
- medical.

The population requiring different procedures in these areas of intervention are the following groups of people:

- infected and sick, hospitalized;
- infected and sick, non-hospitalized;
- infected (carriers), asymptomatic or oligosymptomatic;
- families of sick people (COVID-19);
- under collective quarantine;
- under home quarantine;
- suffering from other somatic diseases (risk group);
- hospitalized for other diseases;
- nursing home residents;

- over 60 years old;
- lonely, in need of constant home care, disabled, homeless, addicted with incapacity or severely restricted ability to live independently (intellectually disabled, mentally ill, culturally and linguistically diverse immigrants);
- children and youth;
- deprived of liberty (arrested);
- military services (the police, army, border guards, city guards);
- municipal and state services working on a continuous basis and performing the tasks of maintaining the basic functions of the state (supply, transport, communications, energy);
- performing information tasks (media);
- health care, sanitary services, volunteers;
- people managing health protection systems, sanitary protection, state and local government organizations;
- the others.

Each of the above-mentioned groups of people reveals different mental needs, different symptoms of mental discomfort, mental fatigue and burden. There must be no doubt that a different organizational, informational and medical and, in justified cases, therapeutic message and regime must be adapted for each group. The needs for mental comfort and a sense of mental burden should not be marginalized. The strategic omission of this area today may cause – in accordance with the dynamics of the psychophysiological response to stress –increasing mental disorders starting from as early as 6 months after the danger disappears and manifesting themselves over the following years. Today's mental mobilization costs us so much that it is statistically known (PTSD studies) that distant mental effects of trauma, requiring treatment, may affect 20% or more of the population confronted with the pandemic [11]. Having already undertaken preparations for the development of standards and therapeutic programs necessary for the future, after the epidemic risk has been inhibited, the systems increasing the sense of security here and now should be implemented first [12].

Protection of medical workers' mental health

Particular attention should be paid to the consequences of exposure for health and sanitary services. The COVID-19 epidemic revealed potential gaps in health care also in mental health. Healthcare workers, due to their commitment to combat the epidemic, are more exposed to contact with infected persons and therefore have a significant mental burden. The growing psychological problems of healthcare workers, mainly nurses and more often women than men, concern increased levels of anxiety, depression, insomnia, chronic fatigue, and stress. They are particularly worried about their own

and their families' health, bear the burden of the emotional contact with the sick, are subject to occupational overload due to staff shortages and insufficient personal protective equipment. In a state of mental decompensation, they require reliable information support, reduction of stress, relief of tension, and rest. In the case of continuous work lasting for many hours, they should have a place guaranteed for individual rest and relaxation, as well as for satisfaction of everyday needs such as food, sleep, protective clothing, and contact with family [10, 13, 14].

A brief therapeutic guide for mental disorders accompanying COVID-19 infection

1. In case of need for emergency intervention, give local support and reinforcement as a priority, prevent enhanced agitation, anxiety and exhaustion.
2. Enable or arrange for enabling expression of negative emotions, listen.
3. Make a list of people at risk.
4. Define organizational, informative and medical intervention areas for everyone.
5. Mark the most oppressive areas requiring more urgent intervention.
6. Specify the dominant symptoms of a pandemic acute stress disorder, indicate which constitute the most nuisance.
7. Do not underestimate the role of mental stress before the pandemic (psychosis, anxiety disorders, personality disorders, mood disorders, intellectual disabilities).
8. Provide support to increase the sense of individual security:
   a) organizational security: present a system of procedures, standards and guidelines according to recommendations, directions of conduct, management hierarchy, decision making, and responsibility. Evaluate the state of satisfaction of basic life needs, indicate sources of possibilities for obtaining assistance and provide guarantees for its sustainability. Do not expose yourself to enhancing the threat for other reasons, not related to the epidemic.
   b) informative security: limit the information provided only to this proven and coming from reliable and recommended sources. Recommend limiting access to media information to no more than twice a day, discourage hours of alternate use of Internet, TV and radio information.
   c) medical security: discuss with an individual which are the most annoying symptoms for them and how to control them, increase their knowledge in this area, indicate the possibilities of individual support and reduce the impact of the event on their own. Take educational measures on how to adapt to the new situation and recommend deepening possible and accessible (also remote) relationships with relatives who can provide support in order to prevent loneliness and helplessness. Take adequate, standardized pharmacological intervention to reduce symptoms of: anxiety, mood disorders, sleep disorders, hyperactivity, dissociative and psychotic symptoms. Recommend rational

satisfaction of basic nutritional needs, hydration, sleep, physical activity, and relaxation. [9, 10].

9. The people closest to the sick and exposed persons are the most important empathic link of support and strengthening. Undertake educational and informational work with the families and relatives of exposed persons. Teach others how to provide efficient aid.
10. Reduce the negative impact of chaotic state, caused by conflicting organizational, sanitary and medical recommendations issued by various institutions.
11. Pay particular attention to supporting health professionals.

Conclusions

In terms of security, each of the mentioned groups – being specific pandemic stakeholders – will expect decisions common to all as well as specific to the group. A distinction should be made here between the medical personnel directly involved in combating the epidemic. In terms of organizational security, separate, dedicated procedures and specific solutions must be defined, there must be certainty as to the guidelines of conduct, coordination of individual actions, support systems. A state of mental stability can never be achieved without organizing rules being arranged. Chaos and lack of guidelines will intensify the feeling of threat, fear, incompetence, and helplessness. Cognitive dissonance is characteristic of being in a state of distress. What was still impossible a week ago becomes a reality that the individual has to face even though he or she has never been in a similar situation before and has never been taught any specific behavior. Anyone who confronts the distress and reveals symptoms that prevent him/her from living a safe life is affected with the state of distress. The use of various defense mechanisms is psychologically justified and understandable. The most common mechanism is to suppress anxiety and danger, staying in hope for yourself and your family that "it will not happen to us". The most common way to reduce the negative consequences of distress and maintain a sense of security is to access information. Its credibility is of paramount importance here. For many people the introduced restrictions and epidemic bans are incomprehensible. Stopping the current lifestyle for many becomes an insurmountable difficulty and they want to oppose it by breaking the restrictions and bans (e.g., staying under quarantine, not keeping the recommended distance from others, limiting the potential emission of the virus, etc.). From the feeling of helplessness they undertake destructive, aggressive actions, reveal panic behaviors. The authority managing the emergency rescue system has a very important duty to provide reliable information and scientific knowledge in a clear and transparent way, understandable to everyone. The task of psychiatrists and psychologists during the epidemic is to adapt and supplement the form of information transfer to the recipients' perception. In a situation of global threat and uncertainty about its further development, there are limits to knowledge and competence, also

among the greatest professionals. Organizational managers of the rescue system cannot themselves go beyond this knowledge and ignorance. This can lead to bad and irresponsible decisions.

The entire scientific potential of the different disciplines must be used to halt the spread of the negative effects of the epidemic. It is not only the virologist who will win over the epidemic. It is necessary to listen to the opinions of scientists from different disciplines. Professionals in social communication, social psychology, psychiatry, economics, pedagogy, and others are also needed to fight the epidemic. Listening to this voice guarantees that the message managing the strategy of overcoming the effects of the epidemic is based on knowledge, and not on discretion and presumption. Even the most important sanitary message will never be effective if delivered incompetently.

Not everyone confronted with the pandemic will reveal psychiatric posttraumatic symptoms and will need psychological help and support from others. The majority will manage on their own, will use their own resources to cope with difficult situations. We must remember that in a pandemic situation fear is also needed. Before it becomes destructive, it mobilizes resources to fight, sensitizes to the threat, forces to use safeguards and recommended protection.

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