Psychotherapeutic Options for Post-Pandemic Stress Syndrome

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Abstract: The COVID-19 pandemic and the traumatic events associated with it have triggered many negative emotional reactions, including anxiety, fear, stress and even depressive disorders in many people, especially among health care workers who risked their health and lives fighting on the front lines of the fight against the pandemic. Many of them, after a period of extreme stress and uncertainty associated with the condition, developed the so-called post-pandemic stress syndrome, affecting many aspects of mental health and often making it difficult to function normally in daily life.

Adequate psychological support for medics in the post-pandemic period is crucial, as it affects the functioning of the health care system worldwide. Currently, there are a variety of therapies for post-pandemic stress syndrome. These include cognitive behavioral therapy (CBT), cognitive processing therapy (CPT), Eye Movement Desensitization and Reprocessing (EMDR) therapy, group therapy, Prolonged Exposure Therapy (PE), or Solution-Focused Brief Therapy (SFBT). The choice of the appropriate one depends on the therapist, who selects the method for each patient's individual needs.

Keywords: PPSD, PTSD, Healthcare workers, Psychological therapies for trauma, CBT, CPT, EMDR, PE, SFBT.

INTRODUCTION

The term post-pandemic stress disorder (PPSD) refers to the negative emotional and psychological effects that occur after experiencing the COVID-19 pandemic (coronavirus disease 2019) in individuals particularly exposed to its implications [1]. Such individuals include health care workers, especially those who had direct contact with COVID-19 patients, as a result of which they consistently experienced significantly high levels of stress and significant strain on their mental health. The stressors constantly present in their work environment during the pandemic period had a significant impact on the development of stress and any disorders. These included an increased risk of contracting the virus while caring for infected patients, and thus feeling that their health and lives were at risk, or fear of transmitting the infection to their loved ones [2]. The prevailing shortage of personal protective equipment was also a strong stress factor, as it added to the already existing uncertainty about one's own safety. Constant exposure to traumatic experiences such as cases of severe illness or fatal COVID-19 disease, and therefore the constant sight of human suffering and daily confrontation with death were also among the strong stressors. Another stress factor was also the increased workload and the pressure of prolonged on-call duties due to staff shortages, which led to the phenomenon of exhaustion, both physically, but especially mentally [3]. All of the aforementioned factors are specific predictors for the development of PPSD. In order to reduce the negative effects of the aforementioned stressors and minimize the negative impact of PPSD, adequate support and psychological care should be provided through appropriately selected therapy for all medical professionals.

The term PPSD refers in its essence to post-traumatic stress disorder (PTSD) and describes a wide range of symptoms, such as depression, anxiety disorders, chronic fatigue, difficulty concentrating, sleep disturbances or occupational burnout (burnout) [4, 5]. Although the two syndromes are distinct concepts, their development involves exposure to a traumatic and stressful event. In both cases, the event exceeds the individual's adaptive capacity and ways of coping with

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stress. Yet in the case of PTSD, it is usually one major traumatic event that the individual has witnessed or experienced personally, such as war, violence, rape or an accident [6, 7]. In contrast, PPSD develops as a result of experiencing trauma in the form of several smaller, stressful experiences, the effects of which persist despite the cessation of the pandemic threat [4, 8]. Another important difference is that PTSD is a clinical diagnosis that is described in the International Classification of Diseases (ICD-11), as well as the American Psychiatric Association's Diagnostic Manual (DSM-5) [7]. PPSD, on the other hand, is an unofficial term that so far has not yet been introduced into the ICD-11 International Classification of Diseases. However, this does not mean that this will not change in the near future, as either the World Health Organization (WHO) or the American Psychological Association (APA) may develop specific diagnostic criteria for any mental health disorder associated with the COVID-19 pandemic at any time, and thus officially introduce PPSD as a medical diagnosis [4].

An important part of understanding PPSD is that it is not just an individual mental disorder, but on the contrary, a condition that affects many different aspects of the mental health sphere [9]. Therefore, in the event that someone experiences its symptoms, and these symptoms in turn worsen the individual's daily existence and fulfillment of common and routine duties, one should immediately contact a specialist, such as a psychiatrist or psychologist, who will enable the condition to be properly managed through appropriate therapy.

Accordingly, the review article aims to explore various therapeutic options for those affected by post-pandemic stress syndrome by analyzing the medical literature available in journal databases such as PubMed.

REVIEW METHODOLOGY

Literature Search

A literature review was conducted in the PubMed database, using relevant keywords such as "post-pandemic stress disorder," "COVID-19 mental health," "pandemic impact on mental health," "pandemic-related anxiety," "therapy for post-pandemic stress," *etc*.

Selection Criteria

Articles were selected taking into account their timeliness (published within the last 5 years), accessibility (full-text articles available online) and usefulness (regarding therapies related to post-pandemic stress syndrome). A total of 153 articles were reviewed, where nearly 40 of them were included in the final search - those that matched the topic and purpose of the review.

Article Selection

Based on the abstracts of the articles, a first screening was conducted to select papers related to different therapeutic approaches to post-pandemic stress syndrome. The papers that had the greatest impact on the topic of the article were then selected.

Literature Review

The collected articles are divided into therapeutic categories such as pharmacotherapy, behavioral therapy, relationship-based therapies, relaxation therapies, etc. In reviewing the literature, it was shown that post-pandemic stress syndrome can be treated with a variety of methods, and that the best results can be achieved using multifaceted therapeutic approaches. Some of the main therapeutic options are described further.

THERAPIES FOR POST-PANDEMIC STRESS SYNDROME

Adequate emotional and psychological support for health care workers in the post-pandemic period is of utmost importance, as the mental disorders experienced by medics are not just an individual challenge for individuals, but a significant problem in ensuring the quality of the entire health care system. Such support will help ensure the mental well-being of health care workers and prevent possible risks that could arise during patient care by medics, whose ability to cope with anxiety and stress and maintain mental well-being may be hampered as a result of PPSD [10, 11]. Indeed, attention to the well-being of medical professionals is crucial to ensuring quality standards of patient care. For this reason, dedicated psychological care programs for medical professionals, such as consultations with a psychologist or psychiatrist, stress management training, education to raise awareness of mental health, group support and, most importantly, training in early recognition of PPSD symptoms should be provided by all medical institutions and healthcare facilities [12, 13]. Promotion of therapy and psychological care should also be adequately promoted by relevant professional organizations, trade unions or various medical associations [14, 15]. It is

also important that medics themselves learn to take care of their own psychological well-being and seek appropriate support, if needed, as early as when they begin to feel any, even the slightest, symptoms of PPSD [16].

Therapeutic support for medical professionals with PPSD can include a variety of activities and services. One method is psychological therapies, where health care workers can benefit from individual sessions and various therapies conducted by qualified specialists in psychology and psychiatry. This will help medics cope with the negative effects of trauma, depression, or other unpleasant and difficult consequences of PPSD. Therapy of the trauma that led to the development of post-pandemic stress syndrome is a detailed, comprehensive process, the main goal of which is to help those affected to properly process and overcome its effects [17].

Currently, there are many different methods of PPSD therapy, based on the PTSD treatment model. The choice of the appropriate method depends on the individual's needs and preferences. These include cognitive behavioral therapy (CBT), cognitive processing therapy (CPT), eye movement desensitization and reprocessing (EMDR), visual perception therapy (Somatic Experiencing), group therapy, psychodynamic therapy, prolonged exposure therapy (PE). Prolonged Exposure Therapy (PE), Solution-Focused Brief Therapy (SFBT), art therapy, Mindfulness-Based Therapy (Mindfulness-Based Therapy), Body-Oriented Therapy (Body-Oriented Therapy), and narrative therapy [17-21]. In some cases, pharmacological interventions are also applicable, as appropriately selected medications have a major impact on the treatment of post-traumatic stress disorder symptoms, and also influence the effectiveness of concurrent psychological therapies. Selected therapies for PTSD are discussed below.

COGNITIVE-BEHAVIORAL THERAPY (CBT)

It is one of the most widely used forms of therapy for treating various types of mental disorders, including PPSD [17, 22]. The therapy was pioneered by A. Ellis in 1962 and A.T. Beck in 1970, according to whom its basic premise is that maladaptive cognitive processes contribute to the maintenance of anxiety, distress and all behavioral problems in people [23, 24]. They pioneered the idea that it is an individual's belief systems and personal assumptions that have a profound effect on the state of his or her well-being, as well as on directly observed behavior in everyday life [23].

As a therapeutic approach, CBT focuses on identifying negative thoughts and behaviors that stem from the trauma and influence the development of stress, anxiety, depression and other destructive symptoms [17]. An important component is to understand the impact of traumatic events on the client's life according to the so-called cognitive model. It is based on identifying specific incorrect beliefs, or inappropriate assumptions, as well as checking their validity [22]. Cognitive restructuring alone has even been proven to lead to partial relief of individuals' symptoms [23].

In the next step of CBT therapy, the negative belief patterns and behavioral patterns that determine the formation of automatic, specific thoughts in specific situations in clients are changed during therapy sessions through the learning and development of new, more appropriate coping strategies [19]. During CBT therapy, the therapist attempts to influence the client's cognitive processes in order to achieve the intended effects of changing the client's behavior and learning healthier, more adaptive responses, so the action takes place in the so-called behavioral sphere [20]. The entire therapy is thus focused on the appropriate correlation between feelings, beliefs and behaviors, and focuses on changes in the patient's previous modes of behavior and feelings that previously led to problems in daily functioning. This is because CBT therapy assumes that human thoughts and behaviors significantly affect one's state of well-being, and therefore changing negative behavioral and thought patterns can help improve individuals' mental health [22]. Therapy is typically conducted over 12 sessions, each held once a week. It can be conducted individually or in a group, and the client gradually forms his or her new mental conception of the trauma, thereby reducing its negative impact on his or her life [13, 17].

A paper by J. Chang *et al*. described symptoms of burnout and post-traumatic stress among emergency medicine resident physicians in which cognitive-behavioral therapy was referenced. It was found to be the current mainstay of treatment for post-traumatic stress disorder, although the therapy itself can include a variety of approaches. According to the authors, one of the more popular of these has proven to be exposure-based CBT therapy, aimed at controlling reactions and reducing avoidance by individuals suffering from PTSD [25].

The next paper cited dealt with the effect of CBT therapy on the mental health of medical students in Palestine during the COVID-19 pandemic. The authors conducted the study in two stages. The first involved assessing the prevalence of mental health problems using the General Health Questionnaire (GHQ-12). The second stage, on the other hand, was concerned with determining the impact of the CBT therapy program on the mental health of the study participants. The entire therapy lasted 8 weeks and consisted of weekly, hour-long sessions held via the Internet. Each online session consisted of a lecture, discussion and training on topics approved by the relevant committees. The authors, upon completion of the study, determined in their conclusions that CBT therapy had an effective effect on both overall GHQ-12 questionnaire scores, depression and anxiety, as well as social dysfunctions occurring among the students participating in the study [26]. This proves that CBT therapy can be used to combat mental health problems associated with the trauma caused by the COVID-19 pandemic.

COGNITIVE PROCESSING THERAPY (CPT)

CPT therapy is a strictly trauma-focused therapy, by which it directly addresses memories of stressful, traumatic events or thoughts that led to the development of post-traumatic stress disorder. Although CPT and CBT are two different forms of therapy, they share similar foundations and goals [17]. For example, the main premise of CPT is to focus on processing and working through depressive thoughts, beliefs or traumatic memories. For this reason, this therapy is not uncommonly used to treat people with PTSD and PPSD, since both syndromes have their origins in traumatic events [27]. CBT, on the other hand, is a more generalized form of therapy because, as mentioned, it involves identifying and gradually changing maladaptive thought patterns and behaviors that may or may not be related to the trauma. For this reason, CPT is often considered one of the many variations of CBT, which in this case targets the processing of traumatic thoughts and memories [23].

Treatment in CPT therapy begins with psychoeducation about trauma and PTSD/PPSD. The next step is to identify the negative thoughts, inappropriate beliefs and automatic behaviors that are associated with trauatic events and, at the same time, thus speak to post-traumatic stress disorder. The patient also defines the impact of these events on his or her daily life and thinking about the world. They then move on to create more constructive and realistic ways of thinking and behaving [27].

Recently, the possibility of CPT therapy via telehealth and videoconferencing has especially developed, which is often the method of choice for psychotherapy by people who have difficulty physically reaching psychotherapists. Moreover, during the COVID-19 pandemic, when there was increased social distance, many people with mental health disorders, especially post-traumatic stress disorder, used this method [17, 27]. In studies by many authors, it has been proven that CPT therapy using remote communication methods is just as effective as CPT therapy conducted in person in the office with a specialist. An example of a study addressing this issue is the work by D. Gros and co-authors on satisfaction with therapeutic treatment using telehealth at home compared to an in-person therapy session conducted in real life for PTSD. After analyzing the results, it was shown that participants were satisfied with therapy via telehealth at a level consistent with in-person services [28]. Similar conclusions were made by K. Maieritsch and co-authors in a study on an attempt to compare video conferencing and in-person cognitive processing therapy for PTSD. Namely, they observed that CPT conducted via videoconferencing was equivalent to live in-person treatment [29].

CPT therapy is widely recognized as an effective and appropriate treatment for PTSD, or now PPSD. This is proven, among other things, by a study conducted by O. E. Bogucki and C. N. Sawchuk which is a case study of cognitive processing therapy for post-traumatic stress disorder caused by the trauma associated with the COVID-19 pandemic. The patient described in the study was an approximately 30-year-old woman, employed in the health care system, who had no psychiatric history and no history of behavioral counseling. The woman had been diagnosed with COVID-19 on two occasions after exposure at work, which necessitated home isolation. The patient indicated that the development of her trauma was influenced by the COVID-19 infection, during which she feared that she would die and that no one would be able to resuscitate her quickly enough, as she was home alone during the isolation. The woman reported experiencing intrusive memories, mental agitation when thinking about the trauma, negative states and emotional outbursts, concentration problems or feelings of detachment from others, among other things, over a period of 11 months. The patient also specified that the symptoms have led her to have problems regulating her emotions, even more isolation, and problems functioning in daily life. The patient gave informed consent to participate in weekly CPT therapy, and

during the course of the therapy she reported a reduction in PTSD symptoms and overall functional improvement. At the end of the therapy, through an appropriate diagnostic interview, it was determined that the patient no longer met the diagnostic criteria for PTSD or other psychiatric disorders according to the American Psychiatric Association's DSM-5 (Diagnostic and Statistical Manual of Mental Disorders) classification of mental disorders [30]. In conclusion, the study confirms the effectiveness of CPT therapy for PTSD among COVID-19 trauma patients.

EMDR (EYE MOVEMENT DESENSITIZATION AND REPROCESSING) THERAPY

This is a therapy that was developed by American psychologist Francine Shapiro in the 1980s, involving desensitization and processing through eye movement. This is because in her research, F. Shapiro observed that rapid, repetitive eye movements that are made under certain circumstances can reduce the intensity of negative feelings and thoughts [31]. Unlike other therapies, it aims to change perceptions and reduce negative emotions without revealing details of traumatic events [17]. Currently, EMDR therapy is recommended by the WHO and APA as an effective treatment for post-traumatic stress disorder.

The basic premise of the therapy is the belief that traumatic events lead people to develop a blockage in the brain's processing of information, which in turn entails the persistence of symptoms of PPSD or PTSD. In EMDR, the therapist uses eye movements or other sensory stimuli to bring about the processing of the trauma in the patient. Namely, during the therapy, the patient focuses his attention on the event that led him to develop the trauma through memories or images, while the therapist at the time stimulates the patient's eye movements using light, sound or finger movements [32, 33]. The purpose of stimulating the patient's eye movements is to trigger adaptation and information processing in the brain. In turn, the processing of negative feelings, thoughts, memories through this adaptive way consequently leads to the perception of traumatic events in a new, healthy way. As a result, the patient's symptoms of PPSD or PTSD are alleviated and gradually reduced [31, 32].

The effectiveness of EMDR therapy in treating trauma in is a frequent issue addressed in studies around the world. An example of such a study is the paper written by I. Fernandez, M. Pagani, and E. Gallina on the effectiveness of desensitization and eye movement reprocessing interventions in treating post-traumatic stress disorder among health care workers during the COVID-19 pandemic. The authors included 744 medics in the study, 587 of whom were treated with EMDR. Post-traumatic symptomatology was assessed in detail using the Impact of Event Scale-Revised (IES-R). Analysis of the results showed that there were significant differences between the IES-R scores both before and after therapy in EMDR-treated and non-EMDR-treated subjects, thus speaking in favor of a positive treatment effect. Indeed, the study confirmed that EMDR therapy in this study group had a positive effect on significantly reducing symptoms of post-traumatic stress disorder, such as stress, anxiety, lowered mood, restlessness, anger or sleep disturbances [34].

Another example of an article supporting the effectiveness of EMDR treatment is a paper by M. Nijdam, B. Gersons, J. Reitsma, A. De Jongh and M. Olff, regarding the evaluation of the method in relation to the treatment of post-traumatic stress disorder. In addition, the paper aims to compare the effectiveness of the previously discussed CBT therapy with EMDR therapy. One of the inclusion criteria for the study was a diagnosis of post-traumatic stress disorder according to the American Psychiatric Association's classification of mental disorders. Study participants were randomly assigned by a computer program to both CBT and EMDR therapy according to a 1:1 rule. Patients attending weekly EMDR therapy were asked to focus on a picture of the event that led them to develop the trauma and reveal their most negative emotions while following the therapist's finger movements using so-called saccadic eye movements. At the same time, the patients' level of mental distress was measured every 5-10 minutes until its level was between 1 and 0. Then, in the next step, image processing was applied by gradually introducing more positive visions of traumatic events. The whole process was repeated until the memory of the trauma was neutral. When eye movements caused negative side effects like headaches patients were given auditory stimuli. Patients were evaluated after each completed therapy session for self-reported PTSD symptoms using the IES-R questionnaire. A comparative analysis of the results of the two therapies proved that both therapies were effective in treating post-traumatic stress disorder; however, EMDR therapy was associated with faster mental recovery in trauma patients [35].

PROLONGED EXPOSURE THERAPY (PET)

This therapy was developed by Edna Foa and Michael J. Kozak in the 1980s. It is one form of

cognitive-behavioral therapy focused on trauma in the form of post-traumatic stress disorder [36]. The basic premise of the therapy is to confront the patient with traumatic memories, feelings and thoughts that cause anxiety and fear in order to reduce the negative effects of the trauma. It is meant to teach patients to deal with feelings and memories directly related to the trauma in an appropriate and healthy way, rather than avoiding them. It can be both individual and group [17, 37].

During therapy, the patient's task is to repeat and describe in detail the traumatic events repeatedly until his emotional reactions weaken and he regains a sense of control over his life. In the early stages of therapy, the patient often creates what is known as an anxiety hierarchy, in which he or she places specific feelings and thoughts related to the trauma from those that cause the least anxiety to those that cause the highest level of anxiety. A key moment in therapy right after the therapist becomes familiar with the patient's traumatic experiences is a procedure of repeated exposure to events, thoughts and any stimuli previously avoided by patients due to fear and anxiety associated with the trauma [36, 37]. Patients are exposed to imagined situations in order to become accustomed to the anxiety these situations cause. Initially, these are the situations with the lowest level of anxiety according to the aforementioned anxiety hierarchy. In this part, the therapist helps the patient reinforce the view that he is able to evoke the feelings of his trauma. This includes imaginary exposures, those occurring in imagination, as well as those *in vivo* [37, 38]. The prolonged exposure method can also include other behavioral techniques, such as relaxation training. For example, during imaginary exposures, the patient describes the events that led to the trauma while being recorded. This is followed by listening to the recordings while using breathing techniques to relax [17, 37].

In summary, the goal of PE therapy is to reduce anxiety, and to process one's trauma in a safe environment. Therefore, the relationship between patient and therapist in this type of therapy is extremely important. For the patient has to trust the therapist extraordinarily strongly, in order to be able to fully engage in treatment with prolonged exposure. The therapist, on the other hand, continually supports the patient and helps him or her cope with the emotions evoked. Therefore, the creation of a supportive and safe environment by therapists is of great importance.

One study that describes the use of PE therapy in the treatment of post-traumatic stress caused by the COVID-19 pandemic is the work of A. V. Minnen and co-authors on the comparison of prolonged exposure therapy with EMDR therapy, discussed earlier. In the study, people diagnosed with post-traumatic stress disorder were put on an eight-day treatment program that combined both PE and EMDR therapy. The first group of patients consisting of 44 individuals received PE therapy in the morning and EMDR therapy in the afternoon. The second group of patients consisting of 62 individuals received a reversed sequence of both therapies. The PE therapy in the study was based on the E. Foa approach, according to which patients created an anxiety hierarchy and then were asked to recall memories of the events that were most traumatic for them and describe them. *In vivo* exposure to trauma-linked stimuli that were both safe but anxiety-provoking for patients was used. The results of the study proved that the two therapies can be successfully combined, however their order is important. This is because it was shown that patients who attended PE therapy before EMDR therapy had better treatment outcomes. This sequence of therapies was also associated with better patient ratings in terms of usefulness and effectiveness of treatment [39].

SOLUTION-FOCUSED BRIEF THERAPY (SFBT)

It is a therapy that is short-term in nature, focusing on goals and solutions as opposed to analyzing the past and the events that led patients to develop trauma. This therapy was developed in the 1980s by psychotherapist Steve de Shazer, among others, and is still considered an effective treatment for post-traumatic stress disorder today [40]. The essence of SFBT is currently expressed goals and ways of solving problems, in order to achieve the desired therapeutic effects and change unfavorable patterns of thinking and behavior in the shortest possible time. The therapist's role is to surround the patient with support in identifying desired goals and encouraging creative solutions. The therapist also identifies the patient's strengths and skills that may prove useful in achieving therapeutic effects. Thus, the most important tenet of SFBT therapy is the need to analyze the patient's needs rather than his problems, as well as his strengths and resources rather than his disorders, his achievements rather than his failures, and the need to build and create a new, desirable future rather than constantly analyze a heavy, problematic past [41, 42].

There are a number of studies supporting the effectiveness of SFBT therapy in treating trauma. One

such study is the work by J. Joubert and T. Guse, which is a case study of increased hope and subjective well-being among trauma survivors in South Africa. The subjects participated in one to four hour-long sessions based on SFBT principles, which focused on strengthening patients' personal resources, visualizing their desired future, and striving to achieve their goals quickly. Analysis of the results showed that by participating in the therapy, patients experienced increased hope and improved well-being largely through empathy and general acceptance, and that focusing on their strengths instead of their trauma further facilitated this experience [43]. The study thus proves that SFBT therapy is an appropriate method for treating trauma survivors.

Another study supporting the effectiveness of SFBT therapy is that of J. Li and Y. Liu on the effects of solution-focused therapy on the mental health of study subjects during the COVID-19 pandemic. SFBT therapy enabled participants to feel that they had a say in solving their problems, as their consciousness changed and henceforth they began to view problems as temporary rather than permanent. The change in mindset and the newly adopted perspective of the future helped participants to overcome the negative emotions weighing them down about the pandemic outbreak. Thus, the authors concluded that SFBT therapy had a positive effect on treating the mental health and general well-being problems occurring during the COVID-19 pandemic [44].

CONCLUSIONS

In order to understand the need to treat people with post-traumatic stress disorder, especially those working in the health sector, it is crucial to realize that PPSD is a growing phenomenon whose effects are increasingly visible and extremely severe. As explained despite the fact that PPSD is not an official medical diagnosis, but a term used to describe the general mental health problems faced by individuals in the aftermath of the COVID-19 pandemic, the treatment modalities are the same as for ICD-11-listed PTSD.

This paper presents various types of therapy for post-pandemic stress syndrome. However, it should be noted that the final choice of therapeutic method depends on the diagnosis by a qualified therapist, who will select therapy for the individual needs of each patient.

In conclusion, it has been proven that there are many therapeutic options for PPSD, so that people who have experienced this syndrome have a real chance of returning to their mental balance. For this reason, it is very important that PPSD sufferers consult therapists who specialize in treating this syndrome, and thus undertake dedicated psychological therapies. For it is only by doing so that they can regain their mental well-being, and therapy as presented has a key, undeniable role in this.

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