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Post-Traumatic Stress Disorder (PTSD) – Risk Factors, Treatment and Prevention – A Literature eview

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ABSTRACT

Introduction and objective. Post-traumatic stress disorder is a mental disturbance that is a reaction to an extremely stressful event (trauma) that exceeds a person's ability to cope and adapt. Such events include acts of war, disasters, natural disasters, traffic accidents, being a victim of assault, rape, harassment, abduction, torture, imprisonment in a concentration camp, severe, difficult experiences after taking psychoactive substances, receiving a diagnosis of a life-threatening illness. Typical PTSD symptoms include anxiety, exhaustion, feelings of helplessness, recurring, violent involuntary memories of the traumatic event, flashbacks,

hallucinations or nightmares related to the trauma, and avoidant behaviour in situations associated with the trauma. Treatment of PTSD, depending on the severity and persistence of symptoms, may include psychotherapy and pharmacotherapy. The aim of this study is to systematise information on this condition and raise awareness of this issue among healthcare professionals and patients.

Brief description of the state of knowledge. Post-traumatic stress disorder (PTSD) is a psychiatric condition that can be diagnosed when one or more highly traumatic events, involving life-threatening situations or extreme psychological stress, have caused lasting suffering that leads to long-term symptoms. The diagnosis of PTSD is based on a detailed interview with a psychiatrist or clinical psychologist, confirming the existence of a traumatic event and symptoms persisting for at least one month: reliving the trauma (flashbacks, nightmares), avoiding triggers associated with it, changes in mood/cognition, and hyperarousal (vigilance, anxiety). Exposure-based and trauma-focused therapies are likely to be the most effective – their effects are also the best documented. The first-line drugs used in the treatment of PTSD are antidepressants belonging to the SSRI group, sometimes TLPD or MAOIs. Antiepileptic drugs may sometimes be used, and some sources suggest the use of clonidine or propranolol. Post-traumatic stress disorder severely reduces patients' quality of life, which is why it is essential to raise awareness about the currently available methods of diagnosis and treatment.

Summary. Early diagnosis and treatment of PTSD can improve the quality of life for patients, so it is crucial to take all possible means to increase the public's general knowledge and awareness of this disorder.

Keywords: Post-traumatic stress disorder, PTSD, PTSD risk factors, PTSD treatment

Introduction and description of current knowledge of PTSD and its prevalence and risk factors

Post-traumatic stress disorder (PTSD) is a severe condition linked to feelings of shame and guilt resulting from traumatic incidents. [1] Highly stressful interpersonal experiences are associated with an increased risk of developing post-traumatic stress disorder (PTSD). [2] It is described as a condition in which a person relives traumatic memories, avoids situations that remind them

of the traumatic event, suffers from negative emotions and beliefs, and experiences excessive alertness for months or years after experiencing a serious event. Hyperarousal is a significant factor which involves symptoms such as irritability, anxiety, and impaired sleep and cognitive functioning. [3] The majority of studies have found a strong link between feelings of guilt and the intensity of post-traumatic stress symptoms. PTSD often comes with a lack of control over one's own thoughts, emotions, and behaviour. [4] PTSD occurs in about 6% of the total population, but it can impact as many as 25–35% of people who have suffered a serious traumatic event, such as military veterans and survivors of violence. [3] Risk factors for post-traumatic stress disorder includes events like military operations, cataclysms, natural disasters, traffic accidents, being a victim of assault, rape, molestation, abduction, torture, imprisonment in a concentration camp. [5] The development of post-traumatic stress disorder (PTSD) after a traumatic event is influenced by multiple factors, which include both genetic and environmental factors. [3]

Predisposing factors for PTSD and neurobiological feature

Risk factors for developing post-traumatic stress disorder include being female, age (the most vulnerable group is 18-46 years old), living in a large city, lower level of education, poorer financial situation, and being single. [5] In certain studies, PTSD risk factors have been divided into four categories: socio-demographic factors (e.g. gender); pre-traumatic factors (prior to the traumatic experience; e.g., previous mental health problems); peri-traumatic factors (during or immediately after the traumatic experience, e.g., severity of the trauma); and post-traumatic factors (in the period following the traumatic experience, e.g., low social support). [6] Researchers are also drawn to the neurobiological aspect of this condition. The advances in neuroimaging have contributed greatly to a better knowledge of the structural and function changes in brain reorganisation occurring in people suffering from post-traumatic stress disorder. [7] For many years, most PTSD and anxiety research has focused on amygdalocentric circuits because of their apparent role in fear response, conditioning, and extinction. [8] Research has shown that PTSD is associated with elevated levels of activity in areas related to threat and salience, and decreased levels of activity in the thalamus, a key relay centre among subcortical areas. If these changes in the fear network are found to be repeatable, they could potentially serve as objectively measurable diagnostic markers for PTSD and provide targets for developing new therapeutic approaches, including pharmacological interventions and brain stimulation.[9]

Complex post-traumatic stress disorder

A new diagnosis is complex post-traumatic stress disorder, which, according to researchers, cannot be considered a subtype of PTSD.[10] The diagnosis of complex post-traumatic stress disorder (CPTSD) has been added to the 11th revised edition of the International Classification of Diseases (ICD-11). [11] It differs from classic PTSD in the type of trauma experienced. Traumatic factors of a long-term or repetitive nature contribute to the development of cPTSD, and avoiding these situations can be very challenging or even impossible for the individual. [10] In additional to the basic symptoms of PTSD, it is also characterized by disturbances in three areas of self-organisation: emotional regulation disorders, negative perception of oneself and difficulties in social relationships. [11] This condition is often accompanied by comorbid symptoms such as suicidal tendencies, depression, psychotic episodes, or somatic signs. There is less literature on the adaptation of CPTSD treatment methods, which is an area in need of further study in the coming years. [12]

Post-traumatic stress disorder diagnosis

Various methods have been designed to assess PTSD, which include physician-administered structured diagnostic interviews, self-reporting psychological tests and surveys and psychophysiological assessment. [13] In DSM-5, a quadrifactorial model was employed to characterize PTSD: cluster B – intrusive symptoms, cluster C – sustained avoidance, cluster D – negative changes in mood and cognition, and cluster E – hyperarousal and hyperreactivity. [4] Self-assessment-based ratings are typically less expensive and take a shorter amount of time than structured interviews. [13] The clinical standard for evaluating PTSD is the CAPS-5 (Clinician-Administered PTSD Scale for DSM-5), a structure interview that examines all symptoms of PTSD in accordance with DSM-5. [14] Another popular measure is the PTSD Checklist for DSM-5, which can be used for screening purposes. This is a survey that evaluates 20 symptoms of post-traumatic stress disorder according to the DSM-5 criteria. [15] PTSD is a widely studied condition, yet it also poses a major scientific difficulty due its highly complex psychopathology, which can often be hard to separate from the effects of traumatic experiences in the past. [14]

PTSD treatment - psychotherapy

The current literature indicates that trauma-focused therapies, including cognitive processing therapy (CPT), prolonged exposure therapy (PE), eye movement desensitisation and reprocessing (EMDR), and other therapies that focus primarily on trauma, are the current gold

standard of clinical treatment. The most effective therapies were all individually tailored, rather than group therapies. [16] Latest findings also indicate that video-conferencing therapy is as efficient as face-to-face therapy and constitutes a cost-effective first-line treatment strategy. [17] The use of the guidebook to direct and organize patient therapy has been shown in many studies aimed at the improvement of treatment results. [16] The effective use of trauma-focused therapies has been well documented. Furthermore, in paediatric patients, trauma-focused cognitive behavioural therapy is the treatment of choice for paediatric post-traumatic stress disorder and caregiver engagement is an important therapeutic feature. [18] However, trauma-focused therapies are not used enough, partially because of concerns from doctors and patients that they are too challenging or damaging. Trauma-focused cognitive behavioural therapy draws on cognitive behavioural therapy, taking into account the aspect of psychological trauma. Its duration is specified – it usually consists of 12–16 sessions with a therapist and comprises three main stages: learning relaxation techniques, behavioural exposure and imaginative exposure. [19] TF-CBT has been found to reduce PTSD symptoms, specifically avoidance, one of the four core symptoms: re-experiencing, avoidance, negative changes in cognition and mood, and pronounced changes in arousal and reactivity following the traumatic event. In addition, TF-CBT can also help reduce feelings of shame and isolation. [20] In general, patients report high levels of stress and a recurrence of symptoms when dealing with trauma. But despite the negative feelings, most of the patients are appreciative and see the challenges as a necessary part of getting better. Treating professionals need to highlight that treatment will be difficult and that exposure to trauma may cause symptoms to become more intense, but these are not signs that treatment is not effective. On the opposite, the experience of challenges and the ability to overcome them may be vital to a successful recovery. [19]

PTSD treatment - pharmacotherapy

Pharmacotherapy is only used as a second-line treatment in adults to support the recovery process or when psychotherapy is ineffective or impossible to perform. Treatment should be prolonged, with a recommended duration of at least one year after achieving the desired effect. SSRIs and SNRIs are regarded as treatment of first choice for patients with PTSD. Antidepressants increase serotonin release by blocking the serotonin transporter (SERT) and are effective in alleviating symptoms of anxiety and fear. Currently, there are six SSRIs available across the world for the therapy of PTSD symptoms: sertraline, paroxetine, fluoxetine, fluvoxamine, citalopram, and escitalopram. [21] Clinicians generally agree that few of the currently prescribed treatments for PTSD are adequately supported by high-quality randomised

controlled trials. The positive outcomes of SSRI treatment, which was initially shown to be helpful in treating co-occurring anxiety and depression, prompted research into tricyclic antidepressants, monoamine oxidase inhibitors, and other serotonergic medications used to treatment PTSD, which are frequently used as second-line medications due to the increased side effects and lower quality of supporting evidence. [22] Considering the number of studies conducted over the past two decades and the increased awareness of PTSD as a condition due to ongoing armed conflicts during the same timeframe, numerous medications have also been examined. It is noteworthy that benzodiazepines have been identified as having 'strong precautions' for use. [16] Prazosin continues to be the treatment of choice for sleep disturbances associated with post-traumatic stress disorder (PTSD), including nightmares and arousal disturbances, and may be useful in individuals with co-occurring alcohol use disorder and co-occurring headaches. In additions to its effectiveness in sleep disorders, prazosin has also been proven successful in alleviating during-day PTSD symptoms. [23] Some studies indicate the potential role of propranolol in alleviating PTSD symptoms Propranolol acts mainly by blocking β-adrenergic receptors, which reduces symptoms of hyperactivity and decreases physiological responses related to excessive activity of the sympathetic nervous system, thereby easing emotional stress and the effects of trauma. [24] This pharmacological mechanism is assumed to affect the consolidation process of traumatic memories, which is a defining feature of PTSD by lowering physiological stress indicators, such as an increased heart rate, that are often connected to this disorder. [25] Researches have reported favorable outcomes, yet the findings remain inconclusive, pointing to the need for further studies to determine the efficiency and ideal treatment protocols for using propranolol in the treatment of PTSD. [24]

Other approaches to PTSD treatment

Current comprehensive studies evaluating the therapeutic value of cannabis for treating patients with PTSD have significant weaknesses, such as limitations in language, literature review restricted to a small number of databases, small study sample and narrow range of results. [26] Neurobiological experiments involving both humans and animals have been used to explore the endocannabinoid system's functions and complexity, as it relates to the regulation of fear, anxiety, and mood. However, some sources suggest that there is insufficient evidence for the positive effects of cannabinoids and their derivatives in conditions such as post-traumatic stress disorder, despite the growing popularity of such compounds. In the absence of evidence of effectiveness in well-controlled prospective studies, accurate epidemiological studies have suggested that cannabis use may worsen the outcome of bipolar, depressive, and anxiety

disorders. [27] Cannabis use is very widespread among people who suffer from post-traumatic stress disorder – almost twenty percent of adults with PTSD admit to using cannabis on a daily basis. Further study is required to determine how cannabis use during the treatment phase affects treatment-related outcomes and mechanisms. [28] Though symptoms including anxiety, sleep disturbances, and nightmares may improve, it is also possible that more complex symptoms such as depersonalisation and derealisation may be exacerbated. Both doctors and patients should also be fully informed about the benefits and harms related to cannabis use to reduce the risk of potential future health complications. [26]

Music therapy is being examined more and more in randomised controlled trials and appears to have potential in treating post-traumatic stress disorder. It is defined as the professional use of music and its elements in medicine, education and everyday life. Its aim is to improve the quality of life. Numerous studies have confirmed its effectiveness in treatment of conditions such as pain, hypertension, anxiety, serious mental illness, stress, dementia, depression, and insomnia. Over the recent years, music therapy has become an alternate and less demanding method of treating patients affected by post-traumatic stress disorder. Some studies found promising effectiveness and acceptable tolerability in relieving PTSD symptoms, as well as co-occurring symptoms of depression, anxiety, and insomnia in people with PTSD. [29] The results show promising evidence for the effectiveness of music therapy interventions, but more rigorous studies with full sample size are needed to better evaluate the extent of these effects. Future investigations using this type of large-scale music therapy intervention could make a huge contribution to this developing field. [30]

Psychiatric support dogs for war veterans with post-traumatic stress disorder currently comprise over 19% of support dog teams worldwide. Working with dogs that are trained to help people with mental health issues, including post-traumatic stress disorder, is becoming more common among military veterans with PTSD. [31] Some research shows that animal-assisted therapy is, in general, effective in lowering anxiety in a large group of people, including those with post-traumatic stress disorder. In general, findings indicate that animal-assisted therapy is a valuable and effective method for addressing anxiety among populations at risk for medical and psychological issues. [32] Possible explanations involve the specific tasks the assistance dog has been taught to do and the strong relationship between the guide and the dog. Future studies should concentrate on the access to interventions using assistance dogs for people with mental disorders, the factors and mechanisms influencing the efficacy of the intervention, and research

aiming to understand the influence on areas beyond PTSD symptoms, such as suicidal tendencies and engagement in treatment. [31]

PTSD among var weterans

It is well known that civil and military personnel living in zones of conflict and wars frequently suffer from neuropsychiatric illnesses such as depression, post-traumatic stress disorder and anxiety, which leave permanent marks and affect their emotional response systems. [33] Among United States war veterans, the prevalence of PTSD ranges from approximately 30 percent of veterans of the Vietnam War to 13–14 percent of veterans who have served in the two wars in Iraq and Afghanistan over the most recent 20 years. [16] Veterans suffering from these conditions often report symptoms such as fatigue, headaches, depression, anxiety disorders, post-traumatic stress disorder chronic systemic pain and other signs. Therefore, there is an unquestionable urgent need to conduct appropriate tests among vulnerable groups who require treatment. Recognising and diagnosing mental disorders during and after wartime is an incredibly important task that poses enormous problems. [33] Some studies show that stressors linked to war and conflict have an epigenetic impact on health at the level of the individual, between generations and across generations. Furthermore, it is indicated that in populations vulnerable to factors such as war, there are permanent markers in specific genes. [34] Interventions that treat PTSD should aim to prevent long-term effects and require a comprehensive model of cooperation to be effective. It is essential to establish and implement a range of effective and low-cost multi-sectoral models of partnership-based care and treatment, which in conflict zones rely mainly on the family and general practitioners. [33]

Summary

Early diagnosis and treatment of post-traumatic stress disorder allows for the proper selection of therapy for the patient. Currently we have many therapeutic options available to patients in the healthcare system. That is why it is so important to recognise the symptoms, treat the patient appropriately and treat the condition with the available means. It is important for healthcare professionals to promote the current state of knowledge about PTSD and its treatment. This will significantly improve the quality of life for many patients.

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