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EVOLVING PTSD TREATMENT

Jasmine Ryu

Los Angeles, CA, USA

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Post-traumatic stress disorder (PTSD) is a form of trauma in which a person has difficulty recovering after a scarring experience or witnessing a traumatic event. According to the National Center for PTSD, approximately six percent of the U.S. population at some point in their life struggled with this disorder. Roughly eight of every 100 women and four of every 100 men will have PTSD. Women are more prone to develop PTSD because they are more likely to experience traumatic events (e.g. sexual assault) (*Va.gov: Veterans Affairs,* 2018). Treatment for PTSD has traditionally been medication and therapy. However, recent research on PTSD has significantly expanded treatment options, including psychedelic treatment, theta-burst transcranial magnetic, virtual reality, and stellate ganglion block.

Traditional Treatment

Therapy has been a frequent treatment module for PTSD with some success. A study of The American Psychological Association concluded that, "Psychotherapy is effective, helps reduce the overall need for health services and produces long-term health improvements" (Bhatia, 2012). Research reveals that approximately 75 percent of patients who participate in psychotherapy experience relief and are able to better function in their lives. It's been shown to

improve emotional and psychological well-being and is linked with positive changes in the brain and body. Although there are many different types of psychotherapy, a combination of different techniques may be used to meet the patient's best needs. Types of psychotherapy include cognitive behavioral therapy, interpersonal therapy, dialectical behavior therapy, and psychodynamic therapy. It is often used in combination with medication.

Medication has also been a beneficial treatment option with some success. Researchers in 2011 analyzed 115 studies on the effectiveness of different medication approaches for PTSD. They found that fluoxetine, paroxetine, sertraline, venlafaxine, and quetiapine had an effective success rate at reducing severe symptoms (Williams, et al., 2022). Antidepressants are often used to treat PTSD symptoms, particularly selective serotonin reuptake inhibitors (SSRIs). Serotonin norepinephrine reuptake inhibitors can also be taken for those who have not responded to SSRIs. These medications raise levels of the brain chemical serotonin, which regulates moods, appetites, and sleep. Improving the communication between the nerve cells leads to improved mood and decreased anxiety. By improving communication between nerve cells, serotonin and other chemicals like norepinephrine can help patients cope with significant fatigue and assist in boosting their moods.

Alpha-1 Blockers are used when a PTSD sufferer is experiencing nightmares or has difficulty sleeping. This medication helps decrease the brain's fear and startle responses. These have been shown to reduce the occurrence of nightmares and sleep disturbances in war veterans with PTSD.

PTSD sufferers have also had success with self-management treatment. A PTSD sufferer can control breathing when experiencing flashbacks of a traumatic event. When frightened, breathing may quicken, resulting in increased feelings of fear and panic. Also, carrying an object

that reminds them of the present may help during a flashback, such as jewelry or a keyring. Writing down negative thoughts as they think of them is suggested as PTSD victims may not realize how many times they denigrate themselves; writing self-deprecating thoughts can highlight how often these thoughts intrude. Also, affirmative or expressive writing can increase resilience and decrease symptoms. When putting emotional experiences into words, it may change the way their experiences are organized in the brain. Detailed writing can help process what they've been through and allow them to go forward.

As effective as medication, therapy, and self-management can be, they don't relieve the symptoms of PTSD for everyone. Also, in the case of medication, there are serious drawbacks. Medications have major disadvantages for the PTSD sufferer. First, antidepressants can take up to twelve weeks to become fully effective. Second, there are side effects, which include dry mouth, insomnia, anxiety, nausea, diarrhea, constipation, and sexual dysfunction. Beta Blocker's side effects may include dizziness, low blood pressure, and fainting. Third, the medications often do not work well for those who have experienced multiple traumas over the years. According to one study, "Antipsychotic risperidone worked no better than a placebo in alleviating typical PTSD symptoms in patients who had the disorder long-term or who continued to experience symptoms after being treated with antidepressants" (Ratner, 2017). Finally, many PTSD patients who use antidepressants have turned to substance abuse and developed anger issues, among other psychological problems (Ratner, 2017). New treatment options offer more weapons in the arsenal of PTSD treatment that avoid some of the medication disadvantages.

New Treatment Options

One of the new treatment options that offer great promise is psilocybin, a chemical that is obtained from fresh or dry mushrooms. Psilocybin may assist by stimulating nerve cell regrowth

in parts of the brain responsible for emotion and memory (University of South Florida, 2013). Further studies have indicated psilocybin's success in mental health treatment. For example, mice given psilocybin overcame fear conditioning better than mice that were given a placebo (Baier, 2013). A study of terminally ill patients discovered that one-time treatment with psilocybin helped with coping. The patients reported an improvement in their quality of life; they were more active, had more energy, and experienced improved relationships with their families (Baier, 2013). Researchers believe psilocybin can also have success in treating PTSD.

Theta-Burst Transcranial Magnetic is a form of brain stimulation that mimics the natural rhythms of activity in the neurons of the brain. TBS uses short, rapid theta bursts of stimulation at high frequencies like 50 hz. A study conducted on fifty veterans with PTSD received this treatment over ten days. Results revealed that theta-burst transcranial magnetic improved social function and revealed indications of efficacy in reducing symptoms compared to traditional treatment (Philip, et al., 2019). There was little improvement after two weeks, but significant improvement occurred after one month. Researchers concluded that the theta-burst transcranial magnetic treatment is promising for the treatment of PTSD; however, further research is required to optimize the treatment.

Virtual reality exposure (VRET) is a type of exposure therapy that involves using the latest technology. Exposure therapy assists with decreasing the intensity of stress responses to situations, thoughts, or memories that provoke fear (Shapiro-Rosenbaum et al., 2024). Patients will discuss with the therapist the causes of their PTSD. Afterward, the therapist will create an environment with VRET. Using a virtual headset, the patient will enter a dark room with screens that create an immersive environment. The therapist will then ask questions about the experience. Dr. Roy states, "I think the advantage to the virtual environment is not everything is

on the patient's shoulder. It's not up to the patient to recall everything that happened to them session after session in excruciating and increasing detail" (Shapiro-Rosenbaum et al., 2024). Virtual reality exposure is effective because in the face of a traumatic event, a natural response is an intense fear reaction to sounds or sights that remind them of their trauma. As the patient is exposed to their triggers it allows them to confront their fear. The patient slowly adapts to the triggers over time; their stress response to triggers will become less and less intense. A clinic that has tried this technique has reported that a patient exhibited a decrease in PTSD symptoms (Shapiro-Rosenbaum et al., 2024).

Stellate Ganglion Block (SGB) is the newest promising treatment for PTSD. This involves injecting anesthesia into the stellate ganglion nerves. This nerve is a part of the sympathetic nervous system, otherwise known as the “fight or flight” response. By applying a long anesthetic, the fight-or-flight response is turned off for an extended time period. The neurotransmitters in the brain return to their normal state, resulting in long-term relief of symptoms. A trial was conducted in 2019 exploring the effects of SGB treatments on PTSD symptoms. These treatments effectively reduced symptoms over eight weeks, having the biggest effect on severe symptoms (Olmsted, et al., 2019). Another study of multiple trials of this treatment resulted in only one trial that revealed strong evidence (Kerzner, et al., 2021). Thus, Stellate Ganglion Block will need further research as it has mixed results.

Conclusion

Post-traumatic stress disorder is a psychological disorder that is caused by distressing events like violent attacks, childbirth experiences, military combat, and more. People typically seek medical advice within 4 weeks of the event if they have not naturally improved over a few weeks. Common treatment for PTSD is psychotherapy, antidepressants, and alpha-1 blockers.

However, these treatments are not successful in resolving PTSD symptoms for everyone. New treatments for mental health issues are being discovered that have promise for improved PTSD treatment, such as psychedelic treatment, theta-burst transcranial magnetic, virtual reality, and stellate ganglion block. Since these methods are new, there isn't enough data to support their efficacy in treating PTSD. Further research needs to be conducted in order to expand treatments for PTSD.

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