

Post-Traumatic Stress Disorder: A Review from Clinical Perspective

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ABSTRACT

Post-traumatic stress disorder (PTSD) is being increasingly recognized and widely researched as a condition with high incidence but potentially preventable. It is increasingly associated with trauma of various types including hospital and intensive care admission (ICU) and is now a recognized entity among the ICU survivors requiring a multidisciplinary approach including psychotherapy. The authors herein, give an overview of PTSD, including the recent diagnostic guidelines and an outline of the treatment.

Keywords: *Cognitive behavioral therapy, DSM-5, Eye movement desensitization and reprocessing, PTSD, Trauma.*

Post-traumatic stress disorder (PTSD) is a pathological mental state that may develop following exposure of the patient to a threatening or horrifying psychological event. This triggering event may be exposure to actual or threatened death, serious injury or sexual violation [1,2]. The prediction of a person developing PTSD remains a challenge as it may occur post a single traumatic event or after a prolonged trauma [3]. PTSD was first described in 1980 by the American Psychiatric Association in Diagnostic and Statistical Manual of Mental Disorders (DSM)-III [2].

Various types of traumas have been found to result in PTSD. The common events include:

- Military combat
- Violent personal assault
- Natural and man-made disasters
- Severe motor vehicle accidents
- Sexual violation like rape, incest, childhood sexual abuse
- Diagnosis of a life-threatening illness or hospitalization in an intensive care unit (ICU)

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Sexual violation- Sexually assaulted female survivors experience PTSD most frequently, most common offence related to PTSD being rape [4].

Military combat- Grieger et al. (2006) and Macgregor et al. (2013) in their studies concluded that PTSD occurring after combat injury to be directly proportional to the extent of injury [5,6].

Hospitalization in ICU- Girard et al. (2007) concluded in their study that PTSD occurred in as high as 14% of patients six months following critical illness requiring mechanical ventilation and were seen more in female patients and patients who received lorazepam. The same was observed by Bienvenu et al. (2015)[7,8].

Parker et al. (2015) in their well conducted systematic review and meta-analysis concluded that PTSD symptoms occurred in about 20% of critical illness survivors at 1-year follow-up [9]. A higher prevalence was seen in those who had pre-ICU comorbid psychopathology, received benzodiazepines, and had early memories of frightening ICU experiences.

Acute coronary syndrome (ACS)-A meta-analysis by Edmondson et al. (2012) which included 24 observational cohort studies with total 2383 patients yielded the prevalence of PTSD in about 12% of patients with ACS and also showed the increased risk for recurrent cardiac events and mortality in patients with PTSD [10].

Stroke/Transient ischemic attack (TIA)-Edmondson et al. (2013) in a systematic review and meta-analysis, which included nine studies, totaling 1138 patients, survivors of stroke or TIA, estimated the rate of PTSD following stroke or TIA was 23% [11].

Chronic illness- Spitzer et al. (2009) in their population-based study of 3171 adults in the community found a strong association between PTSD and cardiovascular and pulmonary diseases [12].

Mass conflict and displacement-Tay et al. (2015), in their cross-sectional community study (n = 230) of West Papuan refugees residing in Port Moresby, Papua New Guinea showed a direct relation of mass conflict and displacement with the development of PTSD [13].

It has been shown in various studies that the personal and social factors affect both the likelihood of developing PTSD after a traumatic event and also its clinical presentation (Stein et al. 2007; Kroll, 2003) [14,15]. The various risk factors for developing PTSD have been summarized in Box 1 (Vieweg et al. 2006; Bisson, 2007) [16,17].

Box 1: Factors associated with post-traumatic stress disorder
<p>Pre-traumatic factors</p> <ul style="list-style-type: none"> • Previous psychiatric disorder • Sex (more prevalent in female patients than in male patients) • Personality (external locus of control greater than internal locus of control) • Lower socioeconomic status • Lack of education • Race (minority status) • Previous trauma • Family history of psychiatric disorders
<p>Peri-traumatic factors</p> <ul style="list-style-type: none"> • Severity of trauma • Perceived threat to life • Peri-traumatic emotions • Peri-traumatic dissociation
<p>Post-traumatic factors</p> <ul style="list-style-type: none"> • Perceived lack of social support • Subsequent life stress

The frequency with which PTSD occurs after a traumatic event is influenced by characteristics of the individual and the inciting event (Yehuda, 2002) [18]. Overall, women are four times more likely to develop PTSD than men, after exposure to traumatic events [16].

Diagnosis of PTSD

The nature of traumatic events for the diagnosis of PTSD by the DSM-5 [1] and the proposed criteria by ICD-11(international classification of diseases, 11th revision) by Maercker et al. (2013) [19] are listed in table 1 and the symptoms for the diagnosis of PTSD as listed by DSM-5 and ICD-11 are elaborated in table 2.

Table 1:

Traumatic event(s) required for diagnosis of PTSD
<p>DSM-5 criteria</p> <p>Exposure to actual or threatened death, serious injury, or sexual violation, in one or more of the following ways:</p> <p>Directly experiencing the traumatic event(s)</p> <p>Witnessing traumatic event(s) in others</p> <p>Learning that the traumatic event(s) occurred to a close family member or close friend; cases of actual or threatened death must have been violent or unintentional</p> <p>Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (for example, first responders collecting human remains; police officers repeatedly exposed to details of child abuse); this does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work related</p>
<p>Proposed ICD-11 criterion</p> <p>Exposure to an extremely threatening or horrific event or series of events</p>

Table 2:

DSM-5 criteria	Proposed ICD-11 criteria
<p>Intrusion symptoms Recurrent, involuntary and intrusive distressing memories Recurrent distressing dreams (content and/or affect related) Dissociative reaction (acting or feeling as if the event is recurring) Intense or prolonged psychological distress to cues Noticeable physiological reactions to cues</p>	<p>Intrusion symptoms Vivid intrusive memories, flashbacks, or nightmares, typically accompanied by strong and overwhelming emotions such as fear or horror, and strong physical sensations</p>
<p>Avoidance Avoidance or efforts to avoid distressing thoughts or feelings about or closely associated with the trauma Avoidance or efforts to avoid external reminders (people, places, conversations, activities, objects, situations)</p>	<p>Avoidance Avoidance of thoughts and memories of the event or events Avoidance of activities, situations, or people reminiscent of the event or events</p>
<p>Negative alterations in cognition and mood Inability to remember an important aspect (typically due to dissociative amnesia) Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world (for example, “I am bad, ”No one can be trusted,” “The world is completely dangerous”) Persistent, distorted cognitions about the cause or consequences that lead to self-blame or the blame of others Persistent negative emotional state (for example, fear, horror, anger, guilt, shame) Noticeably diminished interest or participation in important activities Feelings of detachment or estrangement from others Persistent inability to experience positive emotions (for example, happiness, satisfaction, love)</p>	<p>Negative alterations in cognition and mood Not applicable</p>

Post-Traumatic Stress Disorder: A Review from Clinical Perspective

<p>Alterations in arousal and reactivity Irritable behaviour and angry outbursts (with little or no provocation) Reckless or self-destructive behaviour Hyper vigilance Exaggerated startle response Problems with concentration Sleep disturbance</p>	<p>Alterations in arousal and reactivity Persistent perceptions of heightened current threat—for example, as indicated by hyper vigilance or an enhanced startle reaction to stimuli such as unexpected noises</p>
<p>Additional criteria for complex PTSD Not applicable</p>	<p>Additional criteria for complex PTSD Severe and pervasive problems in affect regulation Persistent beliefs about oneself as diminished, defeated, or worthless, accompanied by deep and pervasive feelings of shame, guilt, or failure related to the stressor Persistent difficulties in sustaining relationships and in feeling close to others</p>

A diagnosis of PTSD is made in someone who develops an inability to function normally for more than one month according to DSM-5 criteria.

A multi-center cohort study conducted by Roberts et al. 2007, concluded that the majority of the patients have factual memories of their intensive care unit (ICU) stay and are thus prone to develop PTSD due to stress related to critical illness and highlighted the need for continued patient information, re-assurance and comfort to the patient [20]. The same results were also observed in a prospective study by Badia-Castelló et al. (2006) [21].

Management of PTSD

Post-traumatic stress disorder (PTSD) is often a severe, chronic and disabling disorder which is best treated/managed by a combination of pharmacological and non-pharmacological therapies. The psychotherapy is the primary treatment. Medications are usually required to control the physiological symptoms, which helps the patient to tolerate and work through the psychotherapy.

Types of psychotherapy

- **Trauma-focused cognitive-behavioral therapy (CBT):** It is considered the first line therapy and involves careful and gradual exposure of the patient to the thoughts, feelings, and situations that remind him of the trauma. The therapy also helps to identify the upsetting thoughts about the traumatic event (particularly the distorted and irrational thoughts) and replaces them with a more balanced picture.

Post-Traumatic Stress Disorder: A Review from Clinical Perspective

- **EMDR (Eye Movement Desensitization and Reprocessing):** This includes the elements of CBT with eye movements or other rhythmic, left-right stimulation like hand taps or sounds. This works by “unfreezing” the brain’s information processing system, which has been interrupted during the time of extreme stress.
- **Exposure therapy.** This type of behavioral therapy helps in safely facing the perceived frightening situation so as to make the patient learn to cope with it effectively. This therapy may also use "virtual reality" program that allows the patient to re-enter the situation in which the trauma was experienced.

Meta-analysis by Hogberget et al. (2008) [22], Ponniah et al. (2009) [23] and Bronson et al. (2007) [24] involving studies in adults with PTSD showed that trauma-focused CBT and EMDR should be the first-line non-pharmacological therapies for PTSD. A randomized controlled trial (RCT) by Nijdam (2012) [25], which compared the trauma-focused CBT modality of brief eclectic psychotherapy and EMDR, found that both of them are effective psychotherapeutic interventions, but EMDR is more time-efficient method for treating PTSD.

Studies by Germain et al. (2007) [26] and Raskind et al. (2007) [27] suggested that even a single CBT for sleep abnormalities can significantly improve daytime PTSD symptoms, as can pharmacological treatments for sleep abnormalities. In a RCT by Litz et al. (2007) [28] on the service members with PTSD caused by the traumatic events of war, self-managed CBT led to a greater reduction in PTSD symptoms in comparison to the internet-based supportive counseling.

Medications

Several types of medications can help improve symptoms of PTSD [29]:

- **Antidepressants.** These medicines help to reduce the symptoms of depression and anxiety, thus improving the concentration and decrease sleep related issues. The selective serotonin reuptake inhibitor (SSRI) medications sertraline and paroxetine are approved by the Food and Drug Administration (FDA) for PTSD treatment.
- **Anti-anxiety medications.** These medicines help in decreasing the anxiety and stress symptoms for a brief period of time, as they cannot be prescribed for long term due their potential for abuse.
- **Prazosin.** This drug has been seen to be helpful in symptoms of insomnia or recurrent nightmares, although it is not specifically FDA-approved for PTSD treatment [29,30].

A prospective, multicenter cohort study by Jackson et al. (2014) [31], showed that upto seven percent (%) of ICU survivors have symptoms of PTSD. Bienvenuet al. (2013) [32], in their study showed the prevalence of PTSD as high as 27% in patients surviving acute lung injury.

CONCLUSIONS:

Considering the high incidence of PTSD in ICU survivors and trauma survivors and the effect on their life, it is suggested that the patients who recover from critical illness or have been through a

traumatic event should undergo evaluation for PTSD in their initial visit or follow-up visit with the primary physician and may require CBT and psychological support.

REFERENCES:

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 5th edn. American Psychiatric Publishing, 2013.
2. American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Third Edition. Washington, DC: American Psychiatric Association, 1980.
3. Karstoft KI, Galatzer-Levy IR, Statnikov A, Li Z, Shalev AY. Bridging a translational gap: using machine learning to improve the prediction of PTSD. *BMC Psychiatry*. 2015;16(15):30
4. Chivers-Wilson KA. Sexual assault and posttraumatic stress disorder: a review of the biological, psychological and sociological factors and treatments. *McGill J Med*. 2006;9(2): pp.111-118.
5. Grieger TA, Cozza SJ, Ursano RJ, Hoge C, Martinez PE, Engel CC, et al. Posttraumatic stress disorder and depression in battle-injured soldiers. *Am J Psychiatry*. 2006;163(10):1777-83.
6. Macgregor AJ, Tang JJ, Dougherty AL, Galarneau MR. Deployment-related injury and posttraumatic stress disorder in US military personnel. *Injury*. 2013;44(11):1458-64.
7. Girard TD, Shintani AK, Jackson JC, Gordon SM, Pun BT, Henderson MS, et al. Risk factors for post-traumatic stress disorder symptoms following critical illness requiring mechanical ventilation: a prospective cohort study. *Critical Care*. 2007;11(1):R28.
8. Bienvenu OJ, Colantuoni E, Mendez-Tellez PA, Shanholtz C, Dennison-Himmelfarb CR, Pronovost PJ, et al. Cooccurrence of and remission from general anxiety, depression, and posttraumatic stress disorder symptoms after acute lung injury: a 2-year longitudinal study. *Crit Care Med*. 2015; 43(3):642-53.
9. Parker AM, Sricharoenchai T, Raparla S, Schneck KW, Bienvenu OJ, Needham DM. Posttraumatic stress disorder in critical illness survivors: a metaanalysis. *Crit Care Med*. 2015; 43(5):1121-9.
10. Edmondson D, Richardson S, Falzon L, Davidson KW, Mills MA, Neria Y.. Posttraumatic stress disorder prevalence and risk of recurrence in acute coronary syndrome patients: a meta-analytic review. *PLoS One*. 2012;7(6):e38915.
11. Edmondson D, Richardson S, Fausett JK, Falzon L, Howard VJ, Kronish IM. Prevalence of PTSD in Survivors of Stroke and Transient Ischemic Attack: A Meta-Analytic Review. Minnerup J, ed. *PLoS ONE*. 2013;8(6):e66435.
12. Spitzer C, Barnow S, Völzke H, John U, Freyberger HJ, Grabe HJ. Trauma, posttraumatic stress disorder, and physical illness: findings from the general population. *Psychosom Med*. 2009;71(9):1012-7.
13. Tay AK, Rees S, Chen J, Kareth M, Silove D. Examining the broader psychosocial effects of mass conflict on PTSD symptoms and functional impairment amongst West Papuan refugees resettled in Papua New Guinea (PNG) *SocSci Med*. 2015;132:70–8.

Post-Traumatic Stress Disorder: A Review from Clinical Perspective

14. Stein DJ, Seedat S, Iversen A, Wessely S. Post-traumatic stress disorder: medicine and politics. *Lancet*. 2007;369(9556):139-44.
15. Kroll J. Posttraumatic symptoms and the complexity of response to trauma. *JAMA*. 2003;290:667-670.
16. Vieweg WV, Julius DA, Fernandez A, Beatty-Brooks M, Hettema JM, Pandurangi AK. Posttraumatic stress disorder: clinical features, pathophysiology, and treatment. *Am J Med*. 2006;119(5):383-90.
17. Bisson JI. Post-traumatic stress disorder. *BMJ*. 2007, 14; 334(7597):789-93.
18. Yehuda R. Post-traumatic stress disorder. *N Engl J Med*. 2002; 346(2):108-14.
19. Maercker A, Brewin CR, Bryant RA, Cloitre M, Reed GM, van Ommeren M, et al. Proposals for mental disorders specifically associated with stress in the International Classification of Diseases-11. *Lancet*. 2013;381(9878):1683-5.
20. Roberts BL, Rickard CM, Rajbhandari D, Reynolds P. Factual memories of ICU: recall at two years post-discharge and comparison with delirium status during ICU admission--a multicentre cohort study. *J Clin Nurs*. 2007;16(9):1669-77.
21. Badia-Castelló M, Trujillano-Cabello J, Serviá-Goixart L, March-Llanes J, Rodríguez-Pozo A. Recall and memory after intensive care unit stay. Development of posttraumatic stress disorder. *Med Clin (Barc)*. 2006;126(15):561-6.
22. Hogberg G, Pagani M, Sundin O, Soares J, Aberg-Wistedt A, Tarnell B, et al. Treatment of post-traumatic stress disorder with eye movement desensitization and reprocessing: outcome is stable in 35-month follow-up. *Psychiatry Res*. 2008;159(1-2):101-108.
23. Ponniah K, Hollon SD. Empirically supported psychological treatments for adult acute stress disorder and posttraumatic stress disorder: a review. *Depress Anxiety*. 2009;26(12):1086-109.
24. Bronson D, et al. 2007. Posttraumatic stress disorder in primary care patients. *Compr Ther*. 33(4): pp.208-15.
25. Nijdam MJ, Gersons BP, Reitsma JB, de Jongh A, Olf M. Brief eclectic psychotherapy v. eye movement desensitisation and reprocessing therapy for post-traumatic stress disorder: randomised controlled trial. *Br J Psychiatry*. 2012;200(3):224-31.
26. Germain A, Shear MK, Hall M, Buysse DJ. Effects of a brief behavioral treatment for PTSD-related sleep disturbances: a pilot study. *Behav Res Ther*. 2007;45(3):627-32.
27. Raskind MA, Peskind ER, Hoff DJ, Hart KL, Holmes HA, Warren D, et al. A parallel group placebo controlled study of prazosin for trauma nightmares and sleep disturbance in combat veterans with post-traumatic stress disorder. *Biol Psychiatry*. 2007, 15;61(8):928-34.
28. Litz BT, Engel CC, Bryant RA, Papa A. A randomized, controlled proof-of-concept trial of an Internet-based, therapist-assisted self-management treatment for posttraumatic stress disorder. *Am J Psychiatry*. 2007;164(11):1676-83.
29. Jeffreys M, Capehart B, Friedman MJ. Pharmacotherapy for posttraumatic stress disorder: review with clinical applications. *J Rehabil Res Dev*. 2012;49(5):703-15.

Post-Traumatic Stress Disorder: A Review from Clinical Perspective

30. Koola MM, Varghese SP, Fawcett JA. High-dose prazosin for the treatment of post-traumatic stress disorder. *Therapeutic Advances in Psychopharmacology*. 2014;4(1):43-47.
31. Jackson JC, Pandharipande PP, Girard TD, Brummel NE, Thompson JL, Hughes CG, et al. Depression, post-traumatic stress disorder, and functional disability in the BRAIN-ICU study: a longitudinal cohort study. *Lancet Respir Med*. 2014; 2(5):369-79.
32. Bienvenu OJ, Williams JB, Yang A, Hopkins RO, Needham DM. Posttraumatic stress disorder in survivors of acute lung injury: evaluating the Impact of Event Scale-Revised. *Chest*. 2013;144(1):24-31.