

A Review on Post Traumatic Stress Disorder

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ABSTRACT

PTSD can be categorized into two types of acute and chronic PTSD: if symptoms persist for less than three months, it is termed “acute PTSD,” otherwise, it is called “chronic PTSD.” 60.7% of men and 51.2% of women would experience at least one potentially traumatic event in their lifetime. The lifetime prevalence of PTSD is significantly higher in women than men. Lifetime prevalence of PTSD varies from 0.3% in China to 6.1% in New Zealand. The prevalence of PTSD in crime victims are between 19% and 75%; rates as high as 80% have been reported following rape. The prevalence of PTSD among direct victims of disasters was reported to be 30%–40%; the rate in rescue workers was 10%–20%. The prevalence of PTSD among police, fire, and emergency service workers ranged from 6%–32%. An overall prevalence rate of 4% for the general population, the rate in rescue/recovery occupations ranged from 5% to 32%, with the highest rate reported in search and rescue personnel (25%), firefighters (21%), and workers with no prior training for facing disaster. War is one of the most intense stressors known to man. Armed forces have a higher prevalence of depression, anxiety disorders, alcohol abuse and PTSD. High-risk children who have been abused or experienced natural disasters may have an even higher prevalence of PTSD than adults. Female gender, previous psychiatric problem, intensity and nature of exposure to the traumatic event, and lack of social support are known risk factors for work-related PTSD.

Key Words:

Post-traumatic stress disorder, Depression, Anxiety, Diagnostic and Pharmacotherapy.

Introduction:

PTSD is a mental disorder that may develop after exposure to exceptionally threatening or horrifying events. Many people show remarkable resilience and capacity to recover following exposure to trauma. PTSD can occur after a single traumatic event or from prolonged exposure to trauma, such as sexual in childhood. Predicting who will go on to develop PTSD is a challenge. Patients with PTSD are at increased risk of experiencing poor physical health, including somatoform, cardiorespiratory, musculoskeletal, gastrointestinal, and immunological disorders.

Post-traumatic stress disorder is a psychiatric disorder that was recognized as a distinct nosological entity in the 1900s. Although descriptions of post-traumatic stress disorder are found even in classical texts such as Homer's Iliad, the systematic study of this disorder began only during the First World War and is only with the war in Vietnam, where very high rates were recorded of PTSD in American soldiers, that the disorder began to be known and to become a topic of public debate. It was only after the introduction of the DSM-III in 1980 that post-traumatic stress disorder was officially introduced and recognized.

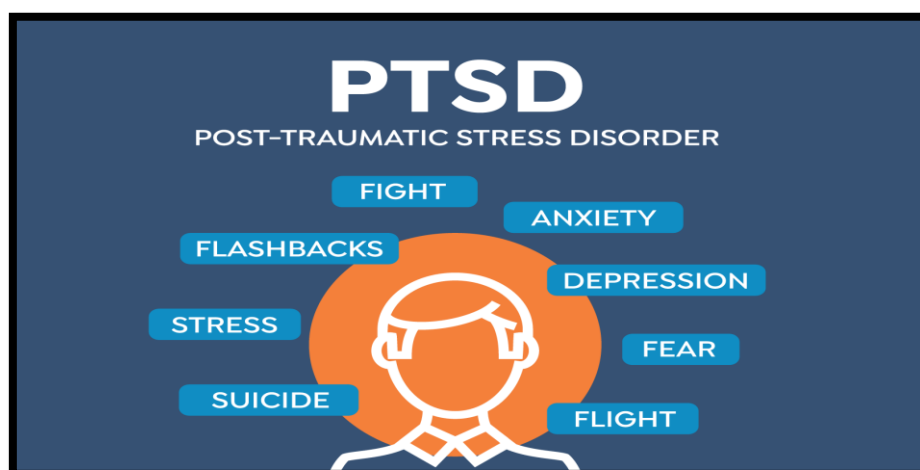


Figure 1: PTSD

History:-

Post-Traumatic Stress Disorder (PTSD) has a rich and complex history that spans thousands of years. During the Middle Ages, the concept of "battle fatigue" emerged, and by the 19th century, physicians like Andrea Mantegazza were describing a condition similar to PTSD, which they called "traumatic hysteria." The term "shell shock" was coined during World War I, and by World War II, the concept of psychological trauma was beginning to be acknowledged. It wasn't until the 1980s, however, that PTSD was officially recognized as a distinct mental health disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III). Since then, our understanding of PTSD has continued to evolve, with advances in neuroscience and psychology improving our understanding of the condition and its treatment.

Importance:-

Post-Traumatic Stress Disorder (PTSD) is a critical mental health condition that requires immediate attention and understanding. Its importance lies in its profound impact on an individual's quality of life, relationships, and overall well-being. PTSD can affect anyone, regardless of age, gender, or background, and can be triggered by various traumatic events, such as combat, natural disasters, abuse, or accidents. If left untreated, PTSD can lead to severe symptoms, including flashbacks, nightmares, anxiety, and depression, which can significantly impair daily functioning and increase the risk of suicide.

❖ **Classification:**

1. Normal stress response:

- PTSD might begin with a normal stress response, but not all stress responses develop into PTSD.
- Normal stress responses affect the nervous, endocrine, and immune systems. The physiological effect of the stress response activates the fight-or-freeze response in the body.
- This response allows the body to either fight or leave the situation and activates adrenaline. Events that may trigger a normal stress response include:
 - accidents
 - illnesses
 - injuries
 - high amounts of stress and tension
- After the threat is over, the body turns to pre-arousal levels. Normal stress responses do not often have long-term effects or disrupt day-to-day life.
- The best treatment for normal stress response is psychotherapy (talk therapy) and support from loved ones. Having someone to talk with or vent to can help ease stress and anxiety.

2. Acute stress disorder:

- Similar to PTSD, acute stress disorder can also develop after a traumatic event. However, symptoms can start between 3 days and 1 month after the event.

- According to the Department of Veterans Affairs, approximately 6-33% of individuals can develop acute stress disorder within 1 month of a traumatic event. This rate is different for each type of trauma.
- For example, after a car accident, approximately 13-21% of individuals have a chance of developing acute stress disorder, compared to 20-50% of individuals after a rape, assault, or mass shooting.
- Symptoms of acute stress disorder are similar to PTSD and can occur after you have:
 - directly experienced a trauma
 - witnessed an event as it occurred to someone close to you
 - learned that an event happened to someone close to you
 - have repeated exposure to extreme or repeated details of a traumatic event



Figure 2: Acute Stress Disorder Symptoms

- Treatment for acute stress disorder often includes psychotherapy, including cognitive behavioral therapy (CBT). Older studies show that CBT helps to reduce symptoms and decreases the likelihood that symptoms will develop into PTSD.

3. Dissociative PTSD:

- It was added to the new version of the Diagnostic and Statistical Manual of Mental disorders (DSM-5) in 2013. A key feature of this form of PTSD is dissociative symptoms (depersonalization or derealization) and emotional detachment.
- Other characteristics of dissociative PTSD include:
 - higher levels of co-occurrence with other mental health conditions
 - dissociative flashbacks and dissociative amnesia
 - more significant history of early life trauma
 - more severe PTSD symptoms
- ResearchTrusted Source suggests that those with re-experiencing symptoms – such as flashbacks after trauma – are more likely to experience disassociation.
- There is still ongoing research on treatment for this type of PTSD. However, experts believe that exposure-based therapy might be helpful for managing these symptoms. These include:
 - cognitive processing therapy (CPT)
 - prolonged exposure (PE)
 - eye movement desensitization and reprocessing (EMDR)
 - narrative exposure therapy (NET)

4. Uncomplicated PTSD:

- Individuals with this type have similar symptoms to other types of PTSD, such as re-experiencing the trauma and avoiding places or people related to the trauma.
- But the main difference between this one and others is that it does not coexist with other mental health conditions such as depression.
- Uncomplicated PTSD is also one of the most commonly diagnosed and is highly responsive to treatment.

5. Complex PTSD:

- It occurs when repeated, or multiple, traumas happen over a period of months, or even years, instead of a traumatic event that happens once and is over – such as a violent attack or car accident.
- Chronic trauma associated with complex PTSD symptoms can occur in childhood or adulthood and can cause issues in relationships and behaviors.
- Complex PTSD can also present through physical health symptoms such as fatigue and chronic pain.
- Treatment for this type of PTSD often takes longer, and recovery often happens at a much slower rate. A highly structured management plan is often designed specifically for you and delivered by a team of trauma specialists.

6. Co-morbid PTSD:

- Individuals with co-morbid PTSD also have at least one co-occurring mental health condition. Some common co-occurring conditions include:
 - anxiety disorder
 - panic disorder
 - major depressive disorder
 - substance use disorder
- Co-morbid PTSD is also a common type as many people have one or more mental health conditions with PTSD. Treatment for this type often includes treating both symptoms of PTSD and the other mental health condition.

❖ Psychotherapies for Post-Traumatic Stress Disorder:

Current treatment guidelines recommend 3 front-line trauma-focused treatments prolonged exposure (PE), cognitive processing therapy (PE), and eye movement desensitization and reprocessing (EMDR); there is currently insufficient evidence supporting preventive interventions.

• Prolonged exposure

PE was developed by Edna Foa, and is a manualized, 8- to 15-session treatment with 90-minute sessions. PE targets avoidance as the symptom that prevents recovery, through helping the client engage in activities they have been avoiding because of trauma and repeated exposure to traumatic memories. PE is one of the most studied treatments for PTSD, with over 20 randomized controlled trials (RCTs). Metaanalytic findings of RCTs and comparing with wait-list control conditions have found that it yields large treatment effect size reductions in PTSD symptoms and loss of diagnosis.

• Cognitive processing therapy

CPT was developed by Patricia Resick. and is a manualized, 12-session treatment with 60-minute sessions. It focuses on addressing cognitive symptoms associated with PTSD that maintain avoidance of negative affect. Like PE, CPT is a rigorously studied treatment, with over 20 RCTs across various traumas, populations, and countries. Meta-analyses assessing RCTs compared with wait-list control conditions and treatment as usual (TAU) have found that CPT yields large effect size reductions in PTSD symptoms and loss of diagnosis.

• Eye movement desensitization and reprocessing

EMDR was developed by Francine Shapiro., and is typically administered in weekly sessions of up to 90 minutes over the course of 3 months, although length of treatment varies based on the needs of the individual. It focuses on reducing the intensity of traumatic memories through eye movements; however, this mechanism is the ongoing.

Indication	Psychotherapy	Description	VA/DoD Guide -lines (2017)	APA Guide -lines (2017)	NICE Guide -lines (2018)	ISTSS Guide -lines (2020)
Prevention	Psychological First aid	Early psychosocial Intervention applied	NA	NA	NA	Insufficient evidence

		during or immediately after a trauma that focuses on determining the basic physical and mental needs of an individual				
	Critical incident stress debriefing	Individual or group treatment provided hours or days after the trauma that focus on emotional ventilation, trauma processing, and psychoeducation	Not recommended, harmful	NA	Not recommended, harmful	Insufficient evidence
Treatment	Prolonged exposure	Teaches individuals to gradually approach trauma-related memories, feelings, and situations, leading to reduced avoidance and decreased PTSD symptoms	High quality of evidence	High quality of evidence	High quality of evidence	High quality of evidence
	Cognitive processing therapy	Teaches individuals who to challenge and modify unhelpful beliefs related to the trauma to create new understandings of the trauma, which reduce its impact on daily life	High quality of evidence	High quality of evidence	High quality of evidence	High quality of evidence
	Eye movement desensitization and reprocessing	Processes the memories of traumatic experiences that contain disturbing emotions, thoughts, beliefs, and physical sensations, thus reducing and eliminating symptoms	High quality of evidence	Moderate rating of evidence	High quality of evidence	High quality of evidence

Table 1: Evidence of Psychotherapies for the prevention and treatment of PTSD

❖ **Mechanisms/pathophysiology:**

➤ **Molecular and neurochemical factors**

Early studies in patients with PTSD showed autonomic reactivity, indicated by increased heart rate and skin conductance in response to trauma-related cues, and exaggerated startle responses. These findings recapitulated symptoms of general hyperarousal and distress following traumatic reminders in PTSD. Indeed, several pharmacological challenge studies with yohimbine (an α_2 -adrenergic receptor antagonist) showed exaggerated neurochemical and behavioural responses consistent with central noradrenergic hyper-reactivity in PTSD.

The hypothalamic–pituitary–adrenal (HPA) axis and sympathetic nervous system constitute the body's fundamental stress response; however, contrary to initial predictions of elevated stress hormones in PTSD, an unusual pattern of low basal (unstimulated) cortisol levels and raised catecholamine levels is evident and has been widely replicated in trauma survivors with PTSD. Epigenetic, molecular and endocrine studies of glucocorticoid signalling and glucocorticoid receptor sensitivity later confirmed a distinct set of HPA axis alterations that reflect exaggerated negative feedback sensitivity in PTSD.

➤ **Genetic factors**

As has been amply shown across many fields of medicine, discovery of risk-associated alleles can provide initial clues to pathogenesis, which might lead to novel therapeutics or tools for stratifying patients for basic and clinical research. The rationale for examining genetic factors in PTSD has come from twin studies that suggest that PTSD risk is moderately heritable. However, the genetic contribution to PTSD is complex, as genetic factors can also influence exposure to potentially traumatic events such as combat or assaultive violence. Even after accounting for genetic effects on risk of exposure, a substantial proportion of vulnerability to PTSD is heritable. Twin studies might highlight the importance of heritable temperamental factors, such as novelty-seeking behaviour and neuroticism in PTSD, or they might identify biological markers that associate with PTSD risk.

For some, trauma exposure functions as a catalyst to augment the effect of hereditary and other environmental contributions to PTSD, such that individuals with the greatest exposure to combat trauma were at increased risk for PTSD as a function of both genetic and environmental factors. Furthermore, a specific functional polymorphism of *FKBP5* has been shown to be associated with increased risk of developing PTSD and other stress-related disorders in response to childhood trauma. Specifically, DNA demethylation occurs in the functional glucocorticoid response elements of *FKBP5* and regulates its function, providing an initial observation of a molecular mechanism of genotype-directed epigenetic change in response to environmental stressors. Interestingly, a large proportion of the genetic liability for PTSD is shared with other psychiatric disorders that can be comorbid with PTSD, such as anxiety and panic disorder, major depression and substance use; genes that confer risk for PTSD might also influence risk for other psychiatric disorders and vice versa.

➤ **Cognitive factors and neurocircuitry**

The earliest neuroimaging and neurochemistry studies in PTSD focused on hippocampal dysregulation because deficits in memory performance and information processing were observed in patients with PTSD. Hippocampal functioning in PTSD was also of interest because of the role of the hippocampus in fear extinction and facilitation of the neuroendocrine response to stress, and because stress exposure and concomitant increases in brain glucocorticoid activity were found to damage hippocampal neurons in animal models and studies of human ageing. Great interest was generated by an initial report of smaller hippocampal volume in those with PTSD.

However, a subsequent study of identical twins suggested that smaller hippocampal volumes reflected risk for PTSD rather than stress-induced glucocorticoid toxicity, which has not been shown in PTSD. Smaller hippocampal volume has been shown to be a vulnerability factor in the persistence of PTSD. These studies were influenced by animal and human studies of fear conditioning and extinction⁷. A large number of studies showed decreased ventromedial prefrontal cortex and rostral anterior cingulate activation in response to both trauma-related and non-trauma-related stimuli in individuals with PTSD.

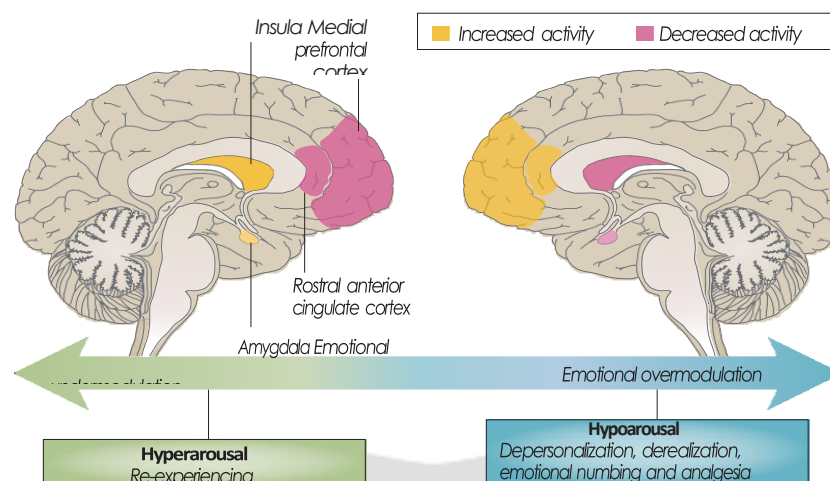


Figure 3: Emotional undermodulation and overmodulation in PTSD

❖ Epidemiology:

Exposure to traumatic events during one's lifetime is almost inevitable. It has been reported that 60.7% of men and 51.2% of women would experience at least one potentially-traumatic event in their lifetime. Although PTSD can appear at any age, it is more common in young adults, because they are more likely to be exposed to precipitating situations. Children can also develop PTSD. Men and women differ in the types of traumas to which they are exposed and their liability to develop PTSD. The lifetime prevalence of PTSD is significantly higher in women than men, so that women are twice as likely to develop PTSD as men are. The prevalence of PTSD varies enormously among different populations. Lifetime prevalence of PTSD varies from 0.3% in China to 6.1% in New Zealand.

In general US population, the prevalence of PTSD is around 6.8%.¹⁶ Reported rates among crime victims are between 19% and 75%, and rates as high as 80% have been reported following rape. Those residing Gaza Strip face serious problems resulting in loss of income, limited access to health care facilities, and decreased quantity and quality of food. One study conducted by the Gaza Community Mental Health Program (GCMHP) in 1996 showed that the prevalence of PTSD was 30% among ex-political prisoners in Gaza. Although comparable international data are limited, we know that large proportions of populations in many countries round the globe are exposed to terrorism, forced relocation, and violence, which suggests that the overall prevalence of exposure to traumatic events worldwide may be high.

Some epidemiological surveys involving a broad range of traumatic exposures have shown that the twofold greater risk for PTSD in women cannot be accounted for by greater exposure to trauma, even when accounting for prior history of victimization or abuse. This finding suggests that women are more vulnerable to PTSD than men. The sex difference seems to be consistent across many trauma types. Genetic studies have suggested higher heritability risk in women, and molecular genetic studies confirmed allelic variation in the adenylate cyclase activating polypeptide 1 (pituitary) receptor type I (*ADCYAP1R1*) gene in relation to PTSD risk in women.

In reality, the greater prevalence of PTSD in women might reflect a combination of greater exposure and vulnerability. A prospective epidemiological study of PTSD risk in abused and neglected children showed that the higher level of revictimization in female victims than in male victims explained a substantial proportion (39%) of the sex differences in PTSD risk. However, a significant sex difference remained after adjusting for greater exposure in women. More research is clearly needed.

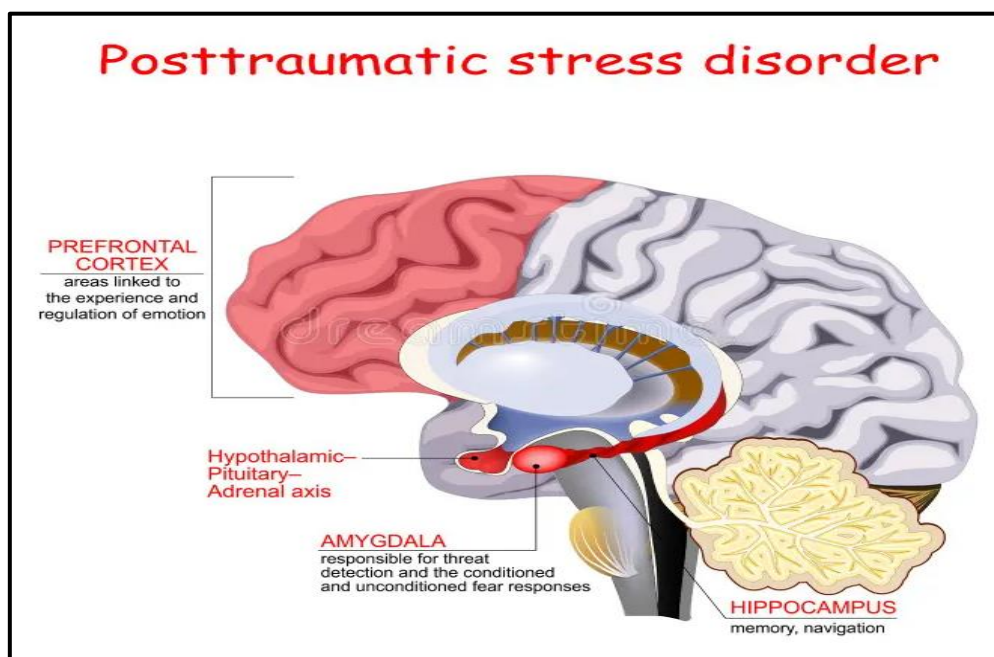


Figure 4: Epidemiology of PTSD

❖ Diagnosis

In principle, it is straightforward to diagnose PTSD in circumstances in which the clinician knows or suspects the patient has been exposed to an extremely traumatic event or critical incident. A series of questions can be asked to determine the presence, frequency and intensity of the symptoms of PTSD. However, diagnosing PTSD when symptoms are present but when the patient does not volunteer information is difficult, particularly if the clinician does not ask (or does not know to ask) about potential exposures.

The diagnosis is also difficult to make when the patient does not wish to be identified as someone who has PTSD, such as military personnel or emergency first responders. Moreover, many of the symptoms of PTSD are not apparent and rely on disclosures of traumatic nightmares, numbing, avoidance or impaired concentration, of which patients might have limited awareness. In addition, patients might believe that disclosing these symptoms will result in occupational or other restrictions. Alternatively, some might wish to exaggerate their symptoms for secondary gain.

Even among those who do not have a specific reason to conceal or to amplify symptoms, the diagnosis of PTSD can be difficult to make because of the propensity to colloquially normalize distress after traumatic events, compounded with a tendency to avoid speaking of distressing memories. Often, patients with PTSD focus on their co-occurring somatic complaints such as musculoskeletal pain or gastrointestinal or neurocognitive symptoms. As a consequence, PTSD can present a diagnostic challenge in non-mental health settings. A study in a primary care setting identified that only 11% of patients with PTSD detected by structured interview were listed as such in clinical files. To complicate matters, somatic symptoms, which can relate to neuroendocrine and autonomic dysregulation in PTSD, might also be attributed to illness caused by toxic environmental exposures, especially in combat environments, and have led to controversies about the existence of distinct illnesses, such as Gulf War Syndrome. Thus, self-reporting instruments and structured diagnostic interviews are recommended in clinical practice to improve the reliability of diagnosis.

No objective laboratory tests can so far confirm the presence of trauma exposure or PTSD, although there is great interest in the development of these tools. Indeed, biological assessments might identify a range of physiological and neurobiological signs and symptoms that might facilitate diagnostic assessment and the prediction of treatment response.

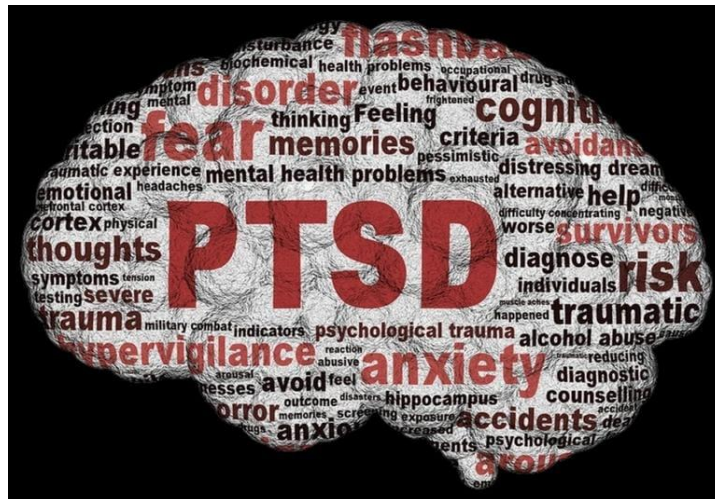


Figure 5: Post Traumatic Stress Disorder

❖ RISK FACTORS

People of all ages can have post-traumatic stress disorder. But you may be more likely to develop PTSD after a traumatic event if you:

- Have severe or long-lasting traumatic experiences.
- Were physically injured during the traumatic event.
- Have been exposed to other trauma earlier in life, such as childhood abuse.
- Have a job that exposes you to traumatic events, such as being in the military or being a first responder.
- Have other mental health problems, such as anxiety or depression.
- Drink too much or misuse drugs.
- Do not have a good support system of family and friends.
- Have blood relatives with mental health problems, including PTSD or depression.

❖ COMPLICATIONS

Post-traumatic stress disorder can disrupt your whole life — your education, job, how well you get along with others, physical health and enjoyment of everyday activities. Having PTSD also may raise your risk of other mental health problems, such as:

- Depression and anxiety disorders.
- Issues with drugs or alcohol use.
- Thinking about and attempting suicide.

❖ PREVENTIONS

After surviving a traumatic event, many people have PTSD-like symptoms at first, such as not being able to stop thinking about what's happened. Fear, anxiety, anger, depression and guilt are all common reactions to trauma. But most people exposed to trauma don't go on to develop PTSD.

Getting timely help and support may prevent usual stress reactions from getting worse and leading to PTSD. This may mean turning to family and friends who will listen and offer comfort. It also may mean seeking out a

mental health professional for a brief course of therapy. Some people also may find it helpful to turn to their faith communities.

❖ SYMPTOMS

Generally, PTSD symptoms are grouped into four types: intrusive memories, avoidance, negative changes in thinking and mood, and changes in physical and emotional reactions. Symptoms can vary over time or vary from person to person.

Symptoms of intrusive memories may include:

- Unwanted, distressing memories of a traumatic event that come back over and over again.
- Reliving a traumatic event as if it were happening again, also known as flashbacks.
- Upsetting dreams or nightmares about a traumatic event.
- Severe emotional distress or physical reactions to something that reminds you of a traumatic event.

Symptoms of avoidance may include:

- Trying not to think or talk about a traumatic event.
- Staying away from places, activities or people that remind you of a traumatic event.

Symptoms of negative changes in thinking and mood may include:

- Negative thoughts about yourself, other people or the world.
- Ongoing negative emotions of fear, blame, guilt, anger or shame.
- Memory problems, including not remembering important aspects of a traumatic event.
- Feeling detached from family and friends.
- Not being interested in activities you once enjoyed.
- Having a hard time feeling positive emotions.

For children 6 years old and younger, symptoms also may include:

- Reenacting a traumatic event or aspects of a traumatic event through play.
- Frightening dreams that may or may not include aspects of a traumatic event.

❖ CONCLUSION

This study comprehensively reviewed recent prevalence estimates of PTSD in the US. Based on the highest quality estimates identified, the 1-year prevalence of PTSD ranged from 2.6% to 6.0% among civilians and from 6.7% to 11.7% among veterans^{22,48}, while the lifetime prevalence ranged from 3.4% to 8.0% among civilians and from 7.7% to 13.4% among veterans^{22,63}. Prevalence estimates varied widely across studies, partly due to differences in study design and population and the lack of consistency in screening tools and methodology used to estimate prevalence. This leads to estimates with wide ranges and complicates comparisons of prevalence across subpopulations, creating barriers for a reliable, quantitative understanding of PTSD prevalence. With this caveat, the data suggest an elevated prevalence of PTSD in certain subpopulations, including women, emergency responders, and American Indian/Alaska Native men and women. Efforts to increase and improve PTSD screening, as well as enhance disease awareness among stakeholders—physicians, policy makers, governments, and patients themselves— may allow for a better detection and management of PTSD, both in the overall US population and among high-risk subpopulations.

ACKNOWLEDGEMENT

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