





PTSD: Epidemiology, Trauma Types, Risk Factors, Diagnosis, Clinical Presentation and Course

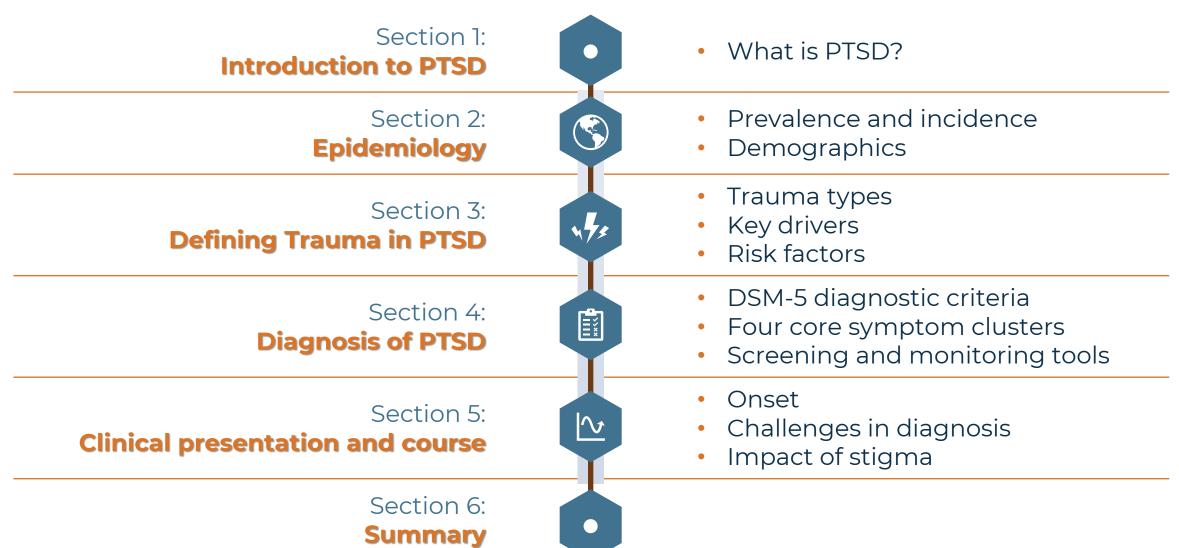


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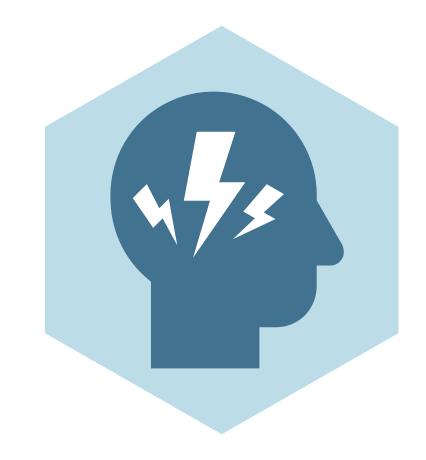
Module Overview: Post-Traumatic Stress Disorder (PTSD)





What is PTSD?

- Post-traumatic stress disorder (PTSD) is a psychiatric disorder that may occur in people who have experienced or witnessed a traumatic event, series of events, or set of circumstances¹⁻³
 - An individual may experience PTSD as emotionally or physically harmful or lifethreatening, and their mental, physical, social, and/or spiritual well-being may be affected¹⁻³



- American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. (2013) Fifth Edition. DSM-5™. American Psychiatric Publishing.
- Yehuda R et al. Nat Rev Dis Primers, 2015; 1, 15057.
- Suomi A.et al. Cochrane Database of Systematic Reviews, 2019;12(12), CD011257.



Prevalence and incidence

PTSD is a highly prevalent disorder worldwide and in the US



- The global lifetime prevalence of PTSD is 4% to 10%¹⁻⁴
- 1-year prevalence rates range from 3% to 6%, depending on prior exposure to trauma¹⁻⁴



- PTSD is one of the most common mental health disorders in the US^{5,6}
- >80% patients are in the general population rather than the military population⁷⁻⁹



Among the general US population:

- ~13 million adults will experience PTSD during a given year (~4.9%)^{3,10-13}
- 7 to 8 out of every 100 people will experience PTSD at some point in their lives^{1,3,10-13}

PTSD, post-traumatic stress disorder; US, United States.

- Koenen KC et al. Psychol Med. 2017; 47:2260-2274.
- 2. Yehuda R et al. *Nat Rev Dis Primers*. 2015; 1: 15057.
- Kilpatrick DG et al. J Trauma Stress. 2013; 26: 537-547.
- Kessler R et al. World Psychiatry. 2014; 13(3), 265-274.
- Lancaster CL. et al. J Clin Med. 2016; 5(11), 105.
- 6. Spottswood M et al. *Harv Rev Psychiatry*. 2017; 25(4), 159-169.

- Davis LL et al. J Clin Psychiatry. 2022;83(3):21m14116.
- United Nations Department of Economic and Social Affairs. (1994). Retrieved from
 - https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf.
- Kessler RC et al. Arch Gen Psychiatry. 2005;62(6):617-627.
- 10. Lehavot K et al. Am J Pre Med. 2018;54(1), e1-e9.

- US Census Bureau. (2022). National Population by Characteristics: 2020-2022. Retrieved from https://www.census.gov/data/tables/time-series/demo/popest/2020s-national-detail.html. (Data on file).
- 12. RE_ Prevalence Estimate Follow-up email.pdf. (Data on file)
- U.S. Department of Veterans Affairs. VA/DoD Clinical Practice Guideline for the Management of Posttraumatic Stress Disorder and Acute Stress Disorder. Version 4.0. 2023. www.healthquality.va.gov/guidelines/MH/ptsd/VA-DoD-CPG-PTSD-Full-CPG.pdf.



Demographics

PTSD can develop at any age and across genders and identities



Gender:

Incidence of PTSD is **2x higher** in women than men^{1,2}

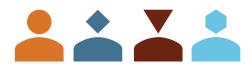
- Women account for 66.4% of the overall PTSD population in the US^{1,2}
- Lifetime prevalence of PTSD is 13% in women and 6% in men^{1,2}
- Females in the general population experience PTSD for a longer duration than do males³



Age:

Typical onset age for PTSD is in young and middle adulthood⁴

 The median age of onset among US adults is 23 years⁴



Ethnicity:

In the US, PTSD prevalence varies by group⁵

Black: 8.7%

White: 7.4%

Hispanic: 7.0%

• Asian: 4.0%



PTSD, post-traumatic stress disorder; US, United States.

^{1.} Davis LL et al. J Clin Psychiatry. 2022;83(3):21m14116.

Kilpatrick DG et al. J Trauma Stress. 2013: 26: 537-547.

American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition. DSM-5™. American Psychiatric Publishing.

Kessler RC. Arch Gen Psychiatry. 2005;62(6), 617-627.

Alegría M et al. Medical Care. 2013;51(12):1114-1123.

Trauma types in PTSD

- Diagnosis of PTSD is based on identifying the index trauma, which informs the assessment of severity¹
- Index trauma can be one or more traumatic events either experienced or witnessed¹
- After exposure to a traumatic event, the risk of developing PTSD varies by trauma type²⁻⁴

Several types of traumatic events can be considered key drivers⁵

PTSD Key Drivers	Odds Ratio
Sexual relationship violence	5.6
Child abuse	2.6–4.9
Life-threatening illness/injury	1.9–3.2
Interpersonal violence	1.7–4.0
Combat/war zone exposure	1.6–5.1
Traumatic brain injury	1.5–1.8

Analysis Group. (2020). Prevalence and Risk Factors of Post-traumatic Stress Disorder in the United States. (Data on file).



Priebe K et al. Eur J Psychotraumatology. 2018;9(1), 1486124.

Liu, R. T. Clinical Psychology (New York), 2017;24(2), 140-153.

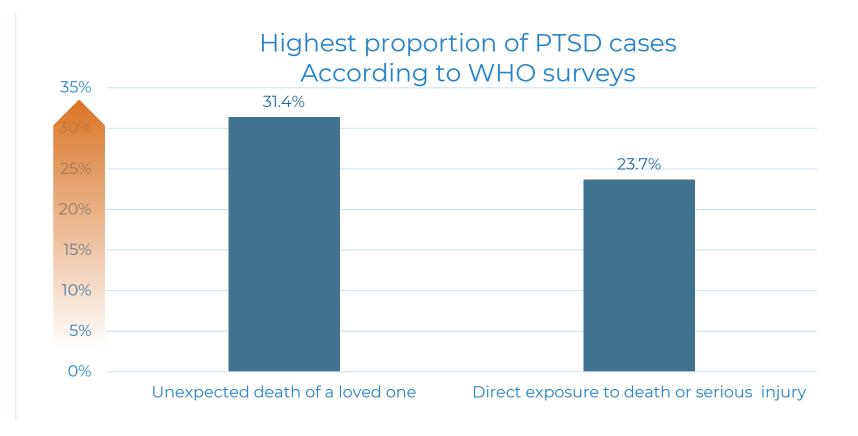
^{3.} Kessler RC et al. Eur J Psychotraumatology. 2017;8(suppl 5), 1353383.

Luz MP et al J Psychiatr Res. 2016;72:51-57.

Most common trauma types in PTSD (1/2)

Trauma exposure and proportion of cases

In an analysis of prevalence and distribution of trauma exposure by the World Health Organization World Mental Health Surveys, unexpected death of a loved one and directly witnessing death or serious injury accounted for the highest proportion of PTSD cases^{1*}



*51,196 traumatic events

PTSD, post-traumatic stress disorder; WHO, World Health Organization.

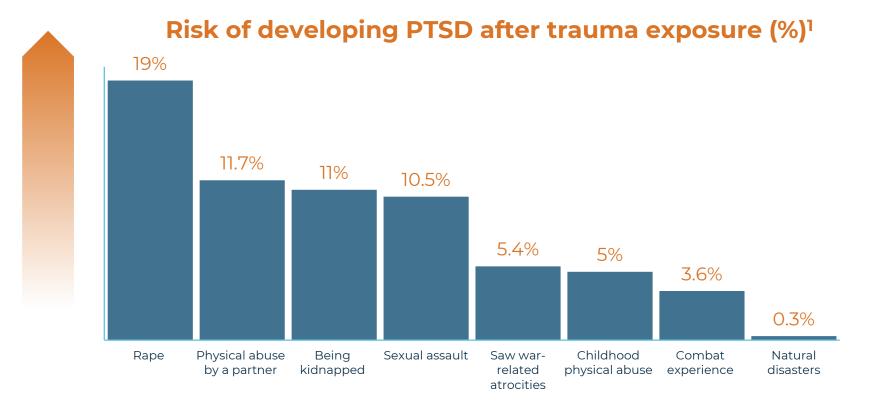
1. Kessler RC et al. Eur J Psychotraumatology. 2017;8(suppl 5), 1353383.



Most common trauma types in PTSD (2/2)

PTSD can develop after experiencing or witnessing a range of traumatic events

The average risk of developing PTSD after a traumatic exposure is 4%, and up to 30%, varying by trauma type¹⁻⁴

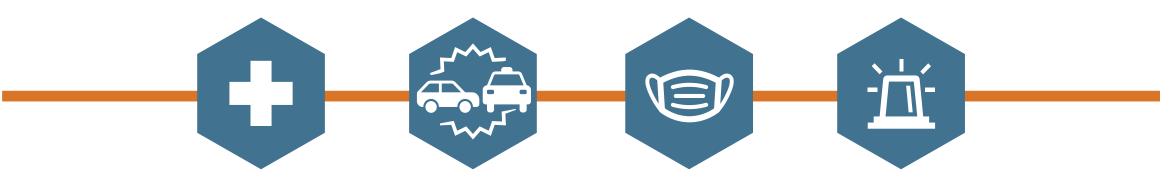


- Kessler RC et al. Eur J Psychotraumatology. 2017;8(suppl 5), 1353383.
- Liu H et al. JAMA Psychiatry. 2017;74(3):270-281.

- Luz MP et al. J Psychiatr Res. 2016;72, 51-57.
- Tortella-Feliu M et al. Neurosci Biobehav Rev. 2019;10:154-165.



Other trauma types in PTSD



- Other sources of trauma that may be less recognized include major health conditions, motor vehicle accidents, health pandemics, and acting as a first responder in an emergency¹⁻⁵
- One meta-analysis of the COVID-19 pandemic reported a global PTSD prevalence of 17.52% among the general population^{6,*}
 - Twice as many healthcare professionals experienced PTSD compared to patients/survivors of COVID-19 (30.98% and 15.45%, respectively)⁶



^{*63} studies assessing the prevalence and associated risk factors of PTSD in 24 countries (n = 124,952). COVID-19, coronavirus disease 2019; PTSD, post-traumatic stress disorder.

Parker AM et al. Crit Care Med. 2015;43(5):1121-1129.

Cordova MJ et al. Lancet Psychiat. 2017;4(4):330-338..

Fekadu, W et al. Front Psychiatry. 2019;10: 519.

Nagarajan R et al. J Affect Disord, 2019;299:52-59.

^{5.} Prioux C et al. International Int J Environ Res Public Health. 2023;20(5): 4160.

Yunitri N et al. Int J Nurs Stud. 2022;126: 104136.

Risk factors

The presence of certain risk factors may influence the likelihood of developing PTSD following exposure to a given traumatic event¹

Several factors were significantly associated with an increased risk for PTSD*			
Sociodemographic factors	FemaleIndigenous American		
Pre-trauma factors	History of physical diseaseFamily history of psychiatric disorder		
Peri-trauma factors	 Cumulative exposure to potentially traumatic experiences Trauma severity 		



^{*}A meta-analysis of 1173 studies evaluating 130 potential risk factors for PTSD. PTSD, post-traumatic stress disorder.

Tortella-Feliu M. Neurosci Biobehav Rev. 2019;107: 154-165.

Risk factors

Subgroups with increased risk of PTSD in the US

According to a systematic review of adults with exposure to at least one traumatic event, increased risk of PTSD is associated with a number of demographic and behavioral health factors^{1,2}

Female sex	Diagnosed mental illness
Younger age (<65 years)	Substance use disorder
Being divorced	Drug use disorder
Being of low income	Alcohol use disorder



Sexual orientation, gender identity, and expression

 LGBTQ+ individuals are at an increased risk of developing PTSD compared to heterosexual individuals³

Race

 Black individuals at increased risk of developing PTSD compared to White individuals³

LGBTQ+, lesbian, gay, bisexual, transgender, queer, and others; OR, odds ratio; PTSD, post-traumatic stress disorder; US, United States.

- Schein J et al. Curr Med Res Opin. 2021;37 (12): 2151-2161.
- 2. Analysis Group. (2020). Prevalence and Risk Factors of Post-traumatic Stress Disorder in the United States. (Data on file).
- Roberts AL. Am J Public Health. 2010;100(12): 2433-2441



PTSD diagnosis

- PTSD is diagnosed using the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria^{1,2}
- Diagnosis of individuals with PTSD³:
 - 83% by mental health provider
 - 17% by a primary care/ other provider
- Diagnosis of PTSD requires identification of one or more traumatic events, defined as the index trauma, which serves as the basis for the assessment of PTSD severity⁴



DSM-5, Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; PTSD, post-traumatic stress disorder.



^{1.} American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition. DSM-5TM. American Psychiatric Publishing.

^{2.} Mann SK et al. (2023). Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK559129/.

Cook JM et al. J Clin Psychol Med Settings. 2021;28(2): 221-228.

Priebe K et al. Eur J Psychotraumatology. 2018;9(1):1486124.

DSM-5 diagnosis of PTSD^{1,2,*}

A. Exposure to **trauma**



B. ≥1 Intrusion (re-experiencing) symptoms

- Recurrent, involuntary, and intrusive distressing memories
- Recurrent distressing dreams
- Dissociative reactions (e.g., flashbacks)
- Intense or prolonged psychological distress to external/internal cues
- Marked physiological reactions to external/internal cues

C. ≥1 Persistent avoidance of stimuli

- Avoidance of or efforts to avoid distressing memories, thoughts, or feelings
- Avoidance of or efforts to avoid external reminders that arouse distressing memories, thoughts, or feelings

D. ≥2 Negative alterations in cognition and mood

- Inability to remember
- Persistent or exaggerated bad feelings
- Persistent, distorted cognitions
- Persistent negative emotional state
- Marked diminished interest
- Feelings of detachment or estrangement from others
- Persistent inability to experience positive emotions



E. ≥2 Marked alterations in **arousal** and **reactivity**

- Irritable behavior and angry outbursts
- Reckless or self-destructive behavior
- Hypervigilance
- Exaggerated startle response
- Problems with concentration
- Sleep disturbance

F. **Duration** of symptoms ≥1 month



G. Symptoms cause **clinically** significant **distress** or functional **impairment**



H. Symptoms are **not** attributable to **another medical** condition

*PTSD was re-classified as a trauma- and stressor-related disorder.

DSM-5, Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; PTSD, post-traumatic stress disorder.

- l. American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition. DSM-5™. American Psychiatric Publishing.
- 2. Mann SK et al. (2023). Posttraumatic stress disorder. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK559129/.



Assessment of PTSD

Instrument	Туре	Usage/Purpose	Description
Clinician- Administered PTSD Scale (CAPS-5) ¹	Structured diagnostic interview	Assessment of all PTSD criteria and symptom severity	 30-question diagnostic interview checklist used in clinical research Rates PTSD symptom based on a 5-point scale of severity ranging from 0 (Absent) to 4 (Extreme/incapacitating)
PTSD Checklist for DSM-5 (PCL-5) ²⁻⁴	Self-report	Screening individuals for PTSD, making a provisional diagnosis, and monitoring change during and after treatment	 20-item checklist Four versions (past month, past week, with PTE assessment, and with LEC-5 and PTE assessment) Decrease in PCL-5 score ≤28 indicates a clinically significant change⁵
Primary Care PTSD screen for DSM-5 (PC-PTSD-5) ²	Self-report	Screening trauma exposure and PTSD symptoms in time-limited primary care settings	 6 yes/no items² One version²

CAPS-5, Clinician-Administered PTSD Scale 5; DSM-5, Diagnostic and Statistical Manual of Mental Disorders, 5th edition; 3. LEC-5, Life Events Checklist for DSM-5; PCL-5, PTSD Checklist for DSM-5; PC-PTSD-5, Primary Care PTSD screen for DSM-5;4. PTE, potentially traumatic events; PTSD, post-traumatic stress disorder.

- . Weathers FW et al. Psychol Assess. 2018;30(3): 383-395.
- 2. Merians AN et al. Med Clin N Amer. 2023;107(1): 85–99.

Lancaster CL et al. *J Clin Med*, 2016;5(11): 105.

U.S. Department of Veterans Affairs. PTSD: National Center for PTSD. (2022). Retrieved from https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp

Marx BP et al. Psychol Assess. 2022;34(2):197-203.



Additional assessments

Instrument	Туре	Purpose	Description
Patient-reported Brief Inventory of Psychosocial Functioning (B-IPF) ¹	Self-report	Monitoring	 7-item self-report questionnaire that assesses PTSD-related psychosocial functional impairment
Symptoms of Trauma Scale (SOTS) ²	Clinician- rated	Monitoring	12-item, interview-based, clinician-rating measure that assesses the severity of a range of trauma-related symptoms
Clinical Global Impression-Severity (CGI-S) ³	Clinician- rated	Monitoring	7-point scale that requires the clinician to rate the severity of the patient's illness at the time of assessment
36-Item Short-Form Health Survey (SF- 36) ⁴	Self-report	Monitoring	36-item questionnaire that assesses general HRQoL across 8 domains, including social functioning

B-IPF, Patient-reported Brief Inventory of Psychosocial Functioning; CGI-S; Clinical Global Impression-Severity; HRQoL, health-related quality of life; PTSD, post-traumatic stress disorder; SF-36; 36-Item Short-Form Health Survey; SOTS; Symptoms 3. of Trauma Scale.

Ford JD et al. *J Psychiatr Pract*. 2015;21(6): 474-483.

Busner J et al. Psychiatry (Edgmont). 2007;4(7):28-37.

Lins L et al. SAGE Open Medicine. 2016;4:2050312116671725.



^{1.} Kleiman SE et al. Psychol Serv. 2022;17:187-194.

PTSD clinical presentation

PTSD symptoms may occur soon after index trauma or may be delayed¹



Delayed-onset PTSD

- Defined as meeting diagnostic criteria ≥6 months after the index event²
- 25% of individuals experience delayed onset²
 - Military combat exposure, Western cultural background, and lower cumulative PTSD incidence (with initial subthreshold symptoms) have been associated with delayed-onset PTSD²
- Delayed diagnosis is due to not meeting full diagnostic criteria⁴



Chronic PTSD

- 1/3 of patients may recover by one-year follow-up³
- 1/3 remain symptomatic 10 years after index trauma³
 - PTSD symptom recurrence and intensification may occur in response to reminders of the original trauma, ongoing life stressors, or newly experienced traumatic events⁴
 - Declining health, worsening cognitive functioning, and social isolation may exacerbate symptoms in the elderly⁴

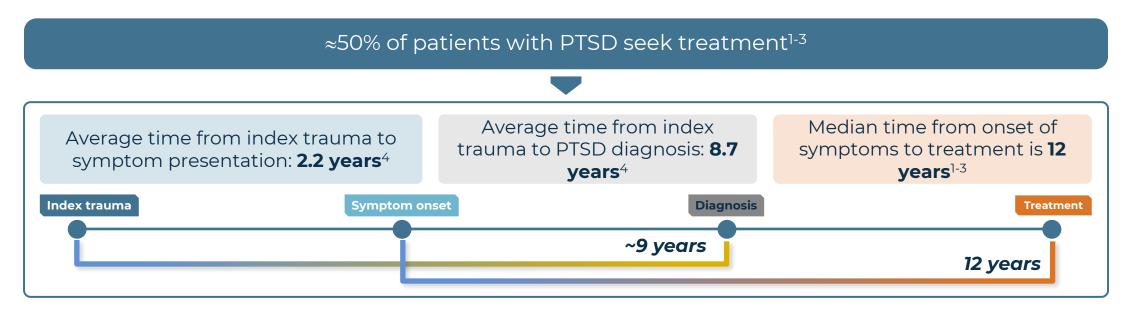
The symptoms of PTSD and the relative predominance of different symptoms may vary over time, as can duration of symptoms⁴

- Bryant RA et al. JAMA Psychiatry. 2013;70(8):839-846.
- Smid GE et al. J Clin Psychiatry. 2009;70(11):1572-1582.
- Kessler RC et al. Arch Gen Psychiatry. 1995;52(12);1048-1060.
- American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition. DSM-5™. American Psychiatric Publishing.



Underdiagnosis of PTSD

Individuals with PTSD may experience significant delays in diagnosis



Many patients and individuals with PTSD seek care for physical symptoms without mentioning psychiatric symptoms or trauma histories due to a lack of understanding regarding the relationship between trauma exposure and their own symptoms⁵

- Nobles CJ et al. Gen Hosp Psychiatry. 2016;43: 38-45.
- Koenen KC et al. Psychol Med. 2017;47:2260-2274.
- Wang PS et al. Arch Gen Psychiatry. 2005;62(6): 603-613.

- Davis LL et al. Poster presented at the Annual Meeting of the American Society of Clinical Psychopharmacology (ASCP), T69, May 30-June 2, 2023.
- Greene T et al. J Clin Psychol Med Settings. 2016;23(2): 160-180.



Underdiagnosis of PTSD

PTSD is often underdiagnosed or misdiagnosed as other mental health conditions

Most prominent barriers to care¹

- Concerns related to stigma, shame/rejection
- Low mental health literacy
- Lack of knowledge and treatment-related doubts
- Fear of negative social consequences
- Limited resources

Individuals with PTSD are **80%** more likely than those without PTSD to have symptoms that meet diagnostic criteria for at least one other mental health disorder (e.g., depressive, bipolar, anxiety, or substance use disorders)²



Misdiagnosis

In the primary care setting, of individuals meeting diagnostic criteria for PTSD³:

- 50% were diagnosed with depression
- 23% were diagnosed with anxiety or panic attacks
- 11% received a diagnosis of PTSD



Under-diagnosis

<50% of individuals who meet criteria for PTSD are correctly diagnosed in primary and secondary care settings⁴⁻⁶

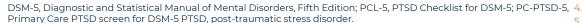
- Kantor V et al. Clin Psychol Rev . 2017;52: 52-68.
- American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition. DSM-5™. American Psychiatric Publishing.
- Meltzer EC et al. The Journal of Behavioral Health Services & Research, 2012;39(2): 190-201.
- Greene T et al. J Clin Psychol Med Settings. 2016;23(2):160-180.
- Liebschutz J et al. J Gen Intern Med. 2017;22(6):719-726
- 6. Zammit S et al. *Br J Psychiatry*. 2018;212(1):11-18.



Underdiagnosis of PTSD

Decreased awareness in the general population and underuse of existing diagnostic tools

- Timely and appropriate diagnosis can be challenging due to 1-3:
 - Variable onset of symptoms
 - Comorbidities
 - Inherent heterogeneity in presentation
 - Stigma
- Misdiagnosis is associated with ineffective management, leading to negative impact on⁴:
 - Treatment compliance
 - Treatment response
 - Patient satisfaction
- Screening tools: Primary Care PTSD Screen for DSM-5 (PC-PTSD-5) and PTSD Checklist for DSM-5 (PCL-5)⁵⁻⁷
 - Guideline recommended
 - Can aid with diagnosis
 - Underutilized in practice



- Institute of Medicine. 2014. Treatment for Posttraumatic Stress Disorder in Military and Veteran Populations: Final Assessment. Washington, DC: The National Academies Press.
- Kessler RC et al. Eur J Psychotraumatology, 2017;8(suppl 5):1353383.
- Parrott S. Electronic News. 2022;17(3): 181-197.



U.S. Department of Veterans Affairs. VA/DoD Clinical Practice Guideline for the Management of Posttraumatic Stress Disorder and Acute Stress Disorder. Version4.0. 2023. www.healthquality.va.gov/guidelines/MH/ptsd/VA-DoD-CPG-PTSD-Full-CPG.pdf (Accessed July 2023).

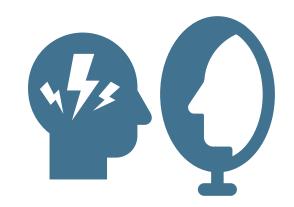
- Williamson MLC et al. J Clin Psychol. 2022;78(11): 2299-2308.
- Geier TJ et al. Depress Anxiety. 2019;36(2): 170-178.





Risk of stigma in PTSD

- Some traumas are likely to be systematically underreported because they are considered embarrassing or culturally sensitive¹
- Misconceptions about mental health symptoms and PTSD can lead to stigmatization of patients by their families and community²
 - PTSD is frequently stigmatized and often associated with military veterans and violence³
- Self-stigma:
 - Defined as the internalization of others' prejudices of mental illness, and is a significant issue among patients with PTSD²
 - Symptoms such as negative thoughts about oneself, feelings of shame, and avoidance may explain co-occurrence and relevance of self-stigma



- Kessler RC et al. Eur J Psychotraumatology, 2017;8(suppl 5): 1353383.
- Benfer N et al. Psychiatr Serv. 2023; appips20220397.
- 3. Parrott S. *Electronic News*. 2022;17(3): 181-197.



Summary

PTSD is a psychiatric disorder that may occur in people who have experienced or witnessed a traumatic event or series of traumatic events¹⁻³

PTSD is a highly prevalent disorder worldwide and is one of the most common mental health disorders in the US^{1,2,4}

Majority of cases are predominantly in the general population (>80%) and women (66%)^{4,5}

Risk of developing PTSD after traumatic exposure varies by trauma type⁶

PTSD is characterized by four core symptom clusters and diagnosed using DSM-5 criteria^{3,7}

Under- and mis-diagnosis are common in clinical practice^{6,8}

Screening tools can aid with screening and potential diagnosis of PTSD⁹

DSM-5, Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; PTSD, post-traumatic stress disorder.

- Koenen KC et al. *Psychol Med*. 2017; 47: 2260-2274.
- Yehuda R et al. Nat Rev Dis Primers. 2015: 1: 15057.
- American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition.
 DSM-5™. American Psychiatric Publishing.
- Kilpatrick DG et al. J Trauma Stress. 2013; 26: 537-547.
- Kessler RC et al. Arch Gen Psychiatry. 2005;62(6):617-627.

- Kessler RC et al. Eur J Psychotraumatology. 2017;8(suppl 5): 1353383.
- 7. Mann SK et al. Posttraumatic stress disorder. StatPearls [Internet]. Last update 2023.
 - www.ncbi.nlm.nih.gov/books/NBK559129.
 - Greene T et al. J Clin Psychol Med Settings. 2016;23(2): 160-180.
 - U.S. Department of Veterans Affairs. VA/DoD Clinical Practice Guideline for the Management of Posttraumatic Stress Disorder and Acute Stress Disorder. Version4.0. 2023.
 - www.healthquality.va.gov/guidelines/MH/ptsd/VA-DoD-CPG-PTSD-Full-CPG.pdf (Accessed July 2023).







Questions









Closing







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PTSD Disease State Education: Module 1