Prevalence, Correlates, and Burden of Subthreshold PTSD in US Veterans

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Abstract

Objectives: To provide an up-to-date estimate of subthreshold posttraumatic stress disorder (PTSD) in US military veterans based on a recently proposed working case definition of subthreshold PTSD and identify sociodemographic, psychiatric, and functional correlates of subthreshold PTSD relative to full PTSD.

Methods: Data were analyzed from a nationally representative sample of US veterans. Probable lifetime subthreshold PTSD was operationalized as self-reported endorsement of a potentially traumatic event (Criterion A); any 2 or 3 PTSD symptom clusters (Criteria B–E); symptom duration of more than 1 month (Criterion F); and PTSD symptom-related distress or functional impairment (Criterion G).

Results: The prevalence of lifetime full PTSD was 8.4% (95% CI, 7.2%–9.7%) and the prevalence of subthreshold PTSD was 3.9% (95% CI, 3.2%–4.8%). Subthreshold PTSD was associated with intermediately elevated odds of current and lifetime psychiatric disorders and clinical problems relative to veterans with no PTSD (adjusted odds ratios [OR] ranged from 1.7 for current alcohol use disorder and 3.3 for lifetime major depressive disorder [MDD]). Full PTSD was associated with even greater odds for most outcomes (OR ranges from 1.7 for current drug use disorder to 11.1 for lifetime MDD). Veterans with subthreshold PTSD reported intermediate-level reductions in mental, psychosocial, and cognitive functioning relative to veterans with no PTSD and full PTSD.

Conclusions: Subthreshold PTSD is prevalent and associated with considerable psychiatric and functional distress/impairment among US veterans. Efforts to identify and treat veterans with subthreshold PTSD may lead to improvements in mental health and functioning in this population.

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Symptoms of posttraumatic stress disorder (PTSD) are common following trauma exposure, but most individuals do not meet all criteria to qualify for the diagnosis.[1,2] For those who do, the detrimental effects of PTSD are well documented, with these individuals more likely to experience other psychiatric disorders, worse functioning, and suicidal thoughts and behaviors,[3,4] as well as increased risk of physical health morbidities and early mortality.[5,6] Although several studies have examined the prevalence, correlates, and overall burden of subthreshold PTSD (ie, endorsing some clinically significant PTSD symptoms but not enough to meet full diagnostic criteria[4,7–10]), definitions of subthreshold PTSD have varied considerably and often relied exclusively on symptom criteria (ie, number of PTSD symptoms or symptom clusters endorsed) and/or outdated diagnostic criteria (eg, *DSM-IV*), which can affect the accuracy and utility of prevalence estimates.

To date, contemporary, population-based data on the epidemiology of subthreshold PTSD are limited, and no known study has examined the prevalence and correlates of subthreshold PTSD using *DSM-5* PTSD symptom criteria, symptom duration, and distress/impairment in a nationally representative sample of US veterans. Given that subthreshold PTSD is associated with a more than 6-fold greater likelihood of developing PTSD relative to individuals with no/minimal PTSD symptoms,[11] epidemiologic studies of subthreshold PTSD, particularly in higher-risk populations, such as US military veterans, are needed. Such efforts may help identify factors associated with subthreshold PTSD, which can inform prevention, risk stratification, and treatment efforts.

To address this gap, we analyzed data from a large, contemporary, nationally representative sample of US veterans to (1) provide an up-to-date estimate of the prevalence of subthreshold and full PTSD; (2) identify sociodemographic, military, and trauma exposure variables associated with subthreshold PTSD and PTSD; and (3) examine the psychiatric and functional burden of subthreshold and full PTSD.

Clinical Points

- Subthreshold PTSD prevalence estimate is 3.9% of US military veterans, and veterans with subthreshold PTSD have higher rates of psychiatric disorders, suicidal thoughts and behaviors, and functional difficulties relative to veterans without PTSD.
- Ongoing efforts to identify, monitor, and potentially treat veterans with subthreshold PTSD may help improve mental health and functioning and mitigate suicide risk in this population.

METHODS

Sample

Data were analyzed from the National Health and Resilience in Veterans Study (NHRVS), which surveyed a nationally representative sample of 4,069 US veterans. Full details about the methodology can be found elsewhere.[12] Briefly, participants completed an anonymous, web-based survey. The sample was drawn from KnowledgePanel, a survey panel of more than 50,000 US households maintained by Ipsos, a research firm. KnowledgePanel is a probability-based survey panel of a representative sample of US adults that covers approximately 98% of US households. Panel members are recruited through national random samples, originally by telephone and now almost entirely by postal mail. To permit generalizability of results to the US veteran population, poststratification weights using benchmark distributions of US military veterans from the most contemporaneous (August 2019) Veterans Supplement of the Current Population Survey[13] were applied in all inferential analyses. All procedures were approved by the Human Subjects Committee of the VA Connecticut Healthcare System, and all participants provided electronic informed consent.

Measures

Probable full PTSD. Lifetime PTSD symptoms were assessed using a modified version of the PTSD Checklist for *DSM-5*.[14] After completing the Life Events Checklist for *DSM-5* (LEC-5),[15] which assesses lifetime exposure to 16 potentially traumatic events (PTEs) and an open-ended "other" event, participants who endorsed 1 or more PTEs were shown their endorsed PTEs and prompted to select "your *worst* stressful experience" and indicate "how much you have been bothered by that problem *ever in your lifetime* (eg, repeated, disturbing, and unwanted memories of the stressful experience)." Full PTSD was operationalized as endorsement of a PTE on the LEC-5 (Criterion A); each of the 4 *DSM-5* PTSD symptoms clusters (Criteria B–E; ie, endorsement of "moderate" or greater severity of 1 or more intrusion symptoms; 1 or more avoidance symptoms; 2 or more negative alterations in cognitions and mood symptoms; and 2 or more alterations in arousal and reactivity symptoms); symptom duration of more than 1 month (Criterion F; "How long did these reactions last?"); and PTSD symptom-related distress or functional impairment (Criterion G; endorsement of "moderately," "quite a bit," or "extremely" in response to the question: "Did these reactions cause you distress or result in a failure to fulfill obligations at home, work, or school?").

Probable subthreshold PTSD. Consistent with a recently proposed working case definition of subthreshold PTSD,[16] subthreshold PTSD was operationalized as endorsement of a PTE on the LEC-5 (Criterion A); any 2 or 3 PTSD symptom clusters (Criteria B–E); symptom duration of more than 1 month (Criterion F); and PTSD symptom-related distress or functional impairment (Criterion G). Veterans who did not meet case definitions for full or subthreshold PTSD were classified as no PTSD.

A broad range of sociodemographic (eg, age and race/ethnicity), military (eg, combat veteran status), trauma (eg, adverse childhood experiences [ACEs]), psychiatric (eg, lifetime history of major depressive disorder [MDD]), and functioning (eg, psychosocial difficulties) measures were examined as potential correlates of lifetime PTSD screening status. Table 1 provides a description of these measures.

Data Analysis

Data analyses proceeded in 4 steps. First, descriptive statistics were computed to estimate the prevalence of PTSD screening status (ie, no PTSD, subthreshold PTSD, and full PTSD). Second, 1-way analyses of variance (ANOVAs) and χ^2 analyses were conducted to compare sociodemographic, military, trauma exposure, and psychiatric characteristics by PTSD screening status. Third, a series of binary multivariable logistic regression analyses were conducted to examine associations between PTSD screening status and positive screens for current and lifetime psychiatric and substance use disorders (eg, current MDD; current generalized anxiety disorder [GAD]; lifetime alcohol use disorder [AUD]; and lifetime drug use disorder [DUD]), as well as endorsement of suicidal thoughts and behaviors (ie, current suicidal ideation [SI] and lifetime suicide attempt) and mental health treatment history. Fourth, a series of weighted multivariable analyses of covariance were conducted to examine associations between PTSD screening status and scores on measures of mental, psychosocial, and cognitive functioning; variables that differed by group in bivariate analyses ($P < .01$) were adjusted for in multivariable analyses.

RESULTS

Prevalence of Probable Full and Subthreshold PTSD

Among the 4,069 veterans included in the total sample, 295 (weighted 8.4%, 95% CI, 7.2%–9.7%) screened positive

Table 1.
Study Measures

Variable	Assessment
Sociodemographic characteristics	A general sociodemographic questionnaire was used to assess age, sex, race/ethnicity, education, marital status, status, and annual household income.
Military characteristics	
Combat veteran	Did you ever serve in a combat or war zone?
Years in military	How many years did you spend in the military?
Treatment characteristics	
Current mental health treatment	Assessed with the questions, "Are you currently receiving psychotherapy or counseling for a psychiatric or emotional problem?" and "Are you currently taking prescription medication for a psychiatric or emotional problem?"
Lifetime mental health treatment	Assessed with the question, "Have you ever received mental health treatment (eg, prescription medication or psychotherapy) for a psychiatric or emotional problem?"
Trauma characteristics	
Adverse childhood experiences	Adverse Childhood Experiences Questionnaire[17] total score.
Direct and indirect trauma burden	Using the Life Events Checklist for *DSM-5*,[18] direct exposures were defined as endorsement of "happened to me" and indirect exposures were defined as endorsement of "witnessed it" or "learned about it happening to close family or friend" and/or were "exposed to it as part of my job." Cumulative direct trauma burden was calculated as the total number of direct trauma exposures to any trauma type (with a possible range of 0–17), and cumulative indirect trauma burden was calculated as the total number of indirect trauma exposures (with a possible range of 0–51).
Index traumatic event	Using the Life Events Checklist for *DSM-5*,[18] participants were shown all of their endorsed potentially traumatic events and asked which was the worst for them. These responses were then categorized as follows: Disaster/accident was defined as endorsement of any of 5 items (natural disaster, fire or explosion, transportation accident, other serious accident, or exposure to toxic substance); interpersonal violence was defined as any of 4 items (physical assault, assault with a weapon, sexual assault, or other unwanted sexual activity); combat or captivity was defined with those 2 respective items; illness/injury was defined as any of 4 items (life-threatening illness or injury, severe human suffering, sudden violent death, or sudden accidental death); and serious injury, harm, or death you caused to someone else was defined by a single item.
Military sexual trauma	Affirmative responses to either of 2 items, which asked, "When you were in the military, did you ever receive unwanted, threatening, or repeated sexual attention (for example, touching, cornering, pressure for sexual favors)?" and "When you were in the military, did you have sexual contact against your will or when you were unable to say no (for example, after being forced or threatened or to avoid other consequences)?"[19]
Psychiatric characteristics	
Current major depressive disorder	Score ≥3 on the Patient Health Questionnaire-4 (PHQ-4).[20]
Current generalized anxiety disorder	Score ≥3 on the Patient Health Questionnaire-4 (PHQ-4).[20]
Current alcohol use disorder	Score on the Alcohol Use Disorders Identification Test.[21]
Current drug use disorder	Screen of Drug Use,[22] response of ≥7 d to the following question is indicative of a positive screen for drug use disorder (DUD): "How many days in the past year have you used nonprescription drugs?" If the response to this question is 6 or fewer days, a response of ≥2 d to the question "How many days in the past 12 mo have you used drugs more than you meant to?" is indicative of a positive screen for DUD.
Current suicidal ideation	SI was assessed using item 9 from the Patient Health Questionnaire-9 (PHQ-9)[23]: "Over the last 2 weeks, how often have you been bothered by: Thoughts that you would be better off dead or of hurting yourself in some way." Participants rated this item on a scale of 0 (Not at all) to 3 (Nearly every day), with a score of 1 or higher indicative of current SI.
Lifetime major depressive disorder	Score on major depressive disorder module from the *DSM-5* version of the Mini Neuropsychiatric Interview.[24]
Lifetime alcohol use disorder	Positive screen on a modified self-report version of the alcohol use disorder module from the *DSM-5* version of the Mini Neuropsychiatric Interview.[24]
Lifetime drug use disorder	Positive screen on a modified self-report version of the drug use disorder module from the *DSM-5* version of the Mini Neuropsychiatric Interview.[24]
Lifetime suicide attempt	Lifetime suicide attempt was assessed via positive endorsement of either "I have had a plan at least once to kill myself but did not try to do it" or "I have attempted to kill myself, but did not want to die" or "I have attempted to kill myself, and really wanted to die" on Question 1 of the SBQ-R.[25]
Functioning measures	
Overall mental health	Score on the Mental Component Summary, a composite of the 4 mental health items of the Short Form Health Survey-8.[26]
Psychosocial difficulties	Score on the Brief Inventory of Psychosocial Functioning (B-IPF).[27]
Cognitive functioning	Score on the Medical Outcomes Study Cognitive Functioning Scale.[28]

Abbreviation: SBQ-R = Suicidal Behaviors Questionnaire-Revised.

for lifetime full PTSD and 159 (weighted 3.9%, 95% CI, 3.2%–4.8%) for lifetime subthreshold PTSD. In the subthreshold PTSD group, the median number of PTSD symptom clusters endorsed (ie, Criteria B–E) was 3. The remainder of the sample (N = 3,615; weighted 87.7%, 95% CI, 86.2%–89.1%) did not meet criteria for either

subthreshold or full lifetime PTSD. The mean PCL-5 score in the full PTSD and subthreshold PTSD groups was 47.9 (SD = 13.4) and 26.8 (SD = 9.0), respectively.

Sociodemographic and Military Correlates of Full and Subthreshold PTSD

Table 2 shows the results of ANOVA and χ^2 analyses of sociodemographic, military, and treatment characteristics by PTSD screening status. Veterans with full PTSD were the youngest, followed by the subthreshold and no PTSD groups. Relative to veterans with no PTSD, those with full or subthreshold PTSD were more likely to be female, less likely to be married or living with a partner, and less likely to report an annual household income greater than $60,000. Veterans with full PTSD were most likely to report using the Veterans Affairs (VA) as their primary source of healthcare and to have ever and currently be engaged in mental health treatment. Veterans with subthreshold PTSD were more likely than veterans with no PTSD to use the VA and to have ever and currently be engaged in mental health treatment. Relative to veterans with no PTSD, those with full PTSD were more likely to be Hispanic and combat veterans.

Trauma Exposure and Psychiatric Correlates of Full and Subthreshold PTSD

Table 3 shows results of ANOVA and χ^2 analyses of trauma exposure and psychiatric characteristics by PTSD screening status. Veterans with full PTSD endorsed the highest number of ACEs and direct trauma exposures. These veterans were also most likely to endorse military sexual trauma and screen positive for most of the assessed psychiatric disorders. Veterans with subthreshold PTSD endorsed a higher number of ACEs and direct trauma exposures relative to those in the no PTSD group. These veterans were also more likely to endorse military sexual trauma and screen positive for most psychiatric disorders. Veterans with full PTSD were most likely to endorse interpersonal violence as their index trauma, followed by veterans in the subthreshold group. Veterans with no PTSD were most likely to endorse disaster/accident as their index trauma, followed by the subthreshold group.

Table 4 shows results of multivariable analyses of associations between PTSD screening status and lifetime and current mental health variables. Relative to veterans with no PTSD, those with full and subthreshold PTSD had elevated odds of most of the psychiatric screening measures assessed (odds ratio [OR] range for full PTSD = 1.67–11.08; OR range for subthreshold PTSD = 1.71–3.26). These veterans also had greater odds of previously attempting suicide (ORs = 2.11 and 2.22, respectively), endorsing current SI (ORs = 5.25 and 2.28, respectively), and to have ever been and currently be engaged in mental health treatment (ORs = 5.29 and 2.32, and 5.23 and 3.32, respectively). Relative to veterans with subthreshold PTSD, those with full PTSD were more likely to screen positive for lifetime MDD and AUD and current MDD, GAD, and SI (ORs = 1.83–4.56) and had greater odds of lifetime and current mental health treatment (ORs = 2.42 and 1.76, respectively).

Table 2.
Sociodemographic and Military Characteristics by Lifetime PTSD Status in US Veterans

Study variables	Weighted mean (SE) or N (weighted %)			Bivariate analyses		
	No PTSD (1) N = 3,615 weighted % = 87.7%	Subthreshold PTSD (2) N = 159 weighted % = 3.9%	Full PTSD (3) N = 295 weighted % = 8.4%	χ^2 or *F*	*P*	Pairwise contrast
Sociodemographic characteristics						
Age	63.5 (0.3)	59.8 (1.2)	49.3 (0.8)	160.74	<.001	1>2>3
Male sex	3224 (91.5%)	127 (85.4%)	213 (78.9%)	60.44	<.001	1>2,3
Race/ethnicity				21.59	.001	
Non-Hispanic white	2989 (78.9%)	121 (73.2%)	208 (71.6%)			3<1
Non-Hispanic black	252 (10.9%)	13 (13.4%)	31 (13.2%)			NS
Hispanic	251 (6.0%)	15 (8.9%)	41 (11.7%)			3>1
Biracial/multiracial and other groups	123 (4.2%)	10 (4.5%)	15 (3.5%)			NS
Married or living with partner	2611 (73.7%)	95 (59.7%)	179 (64.9%)	25.30	<.001	1>2,3
College graduate or higher education	1650 (33.1%)	57 (26.4%)	120 (31.3%)	3.41	.182	NS
Annual household income >$60,000	2136 (60.0%)	75 (50.0%)	146 (47.5%)	24.93	<.001	1>2,3
Military characteristics						
10 y or more of military service	1294 (35.9%)	64 (40.3%)	118 (39.9%)	3.20	.202	NS
Combat veteran	1166 (33.3%)	56 (41.8%)	131 (49.3%)	38.09	<.001	3>1
Treatment characteristics						
VA as primary source of health care	597 (17.1%)	57 (34.8%)	136 (49.7%)	224.10	<.001	3>2>1
Current mental health treatment	257 (7.1%)	43 (30.3%)	133 (50.5%)	611.91	<.001	3>2>1
Lifetime mental health treatment	629 (16.7%)	72 (46.1%)	207 (73.9%)	618.72	<.001	3>2>1

Abbreviations: NS = not significant after Bonferroni correction, VA = Veterans Affairs.

Table 3.

Trauma and Psychiatric Characteristics by Lifetime PTSD Status in US Veterans

Study variables	Weighted mean (SE) or N (weighted %)			Bivariate analyses		
	No PTSD (1) N = 3615 weighted % = 87.7%	Subthreshold PTSD (2) N = 159 weighted % = 3.9%	Full PTSD (3) N = 295 weighted % = 8.4%	χ^2 or *F*	*P*	Pairwise contrast
Trauma characteristics						
Total adverse childhood experiences	1.3 (0)	2.7 (0.2)	3.3 (0.1)	110.68	<.001	3>2>1
Emotional abuse	638 (18.0%)	59 (39.5%)	151 (50.0%)	221.29	<.001	3,2>1
Physical abuse	499 (14.6%)	53 (35.7%)	114 (38.9%)	165.05	<.001	3,2>1
Sexual abuse	321 (8.1%)	33 (14.6%)	85 (25.2%)	106.60	<.001	3>2>1
Emotional neglect	425 (12.7%)	62 (40.1%)	135 (44.9%)	301.50	<.001	3,2>1
Physical neglect	135 (4.6%)	19 (18.5%)	48 (15.5%)	110.99	<.001	3,2,1
Parental separation/divorce	913 (29.9%)	57 (42.7%)	128 (49.4%)	63.38	<.001	3,2>1
Mother treated violently	218 (6.2%)	17 (10.2%)	57 (17.6%)	60.92	<.001	3>1
Household substance abuse	723 (21.4%)	51 (33.1%)	122 (39.0%)	62.87	<.001	3,2>1
Family members with a mental illness	327 (8.7%)	36 (23.6%)	100 (34.6%)	228.32	<.001	3>2>1
Incarcerated household member	141 (4.8%)	15 (10.8%)	35 (14.4%)	59.78	<.001	3,2>1
Total indirect trauma exposure	5.3 (0.1)	6.3 (0.6)	9.7 (0.5)	32.16	<.001	3>2,1
Total direct trauma exposure	2.9 (0)	4.6 (0.2)	5.3 (0.2)	134.25	<.001	3>2>1
Index trauma				176.57	<.001	
Disaster/accident	1,428 (45.5%)	50 (34.7%)	46 (17.9%)			1>2>3
Interpersonal violence	359 (11.4%)	33 (22.9%)	91 (35.4%)			3>2>1
Combat/captivity	380 (12.1%)	15 (10.4%)	53 (20.6%)			3>2,1
Illness/injury	947 (30.2%)	43 (29.9%)	62 (24.1%)			NS
Injury/harm/death to other	25 (0.8%)	3 (2.1%)	5 (1.9%)			NS
Military sexual trauma	209 (5.5%)	26 (13.4%)	86 (25.9%)	195.58	<.001	3>2>1
Lifetime psychiatric characteristics						
History of suicide attempt	73 (2.3%)	15 (9.3%)	48 (17.9%)	209.47	<.001	3>2>1
Lifetime MDD	351 (10.4%)	61 (36.8%)	199 (73.6%)	938.09	<.001	3>2>1
Lifetime AUD	1,313 (37.9%)	83 (53.7%)	184 (65.2%)	105.19	<.001	3>2>1
Lifetime DUD	321 (10.0%)	34 (24.7%)	98 (37.1%)	225.74	<.001	3>2>1
Current psychiatric characteristics						
Probable MDD	146 (5.0%)	25 (13.3%)	121 (46.6%)	671.49	<.001	3>2>1
Probable GAD	121 (4.5%)	16 (15.9%)	95 (40.5%)	565.19	<.001	3>2>1
Probable AUD	288 (9.0%)	18 (20.4%)	54 (21.2%)	65.56	<.001	3,2>1
Probable DUD	240 (7.8%)	19 (13.2%)	55 (25.9%)	114.30	<.001	3>2,1
Suicidal ideation	188 (5.7%)	27 (17.9%)	98 (40.5%)	468.63	<.001	3>2>1

Abbreviations: AUD = alcohol use disorder, DUD = drug use disorder, GAD = generalized anxiety disorder, MDD = major depressive disorder, NS = not significant after Bonferroni correction, PTSD = posttraumatic stress disorder.

Functional Correlates of Full and Subthreshold PTSD

Table 5 shows the results of multivariate analyses of mental, psychosocial, and cognitive functioning by lifetime PTSD screening status. After adjusting for sociodemographic characteristics, military status, mental health treatment, trauma exposure, and lifetime psychiatric and substance use disorders, veterans with subthreshold PTSD scored significantly lower than those with no PTSD on these measures (Cohen *d* range = 0.18–0.28). Larger effect size differences were observed between veterans with full PTSD relative to those with no PTSD (*d* range = 0.49–0.61) and subthreshold PTSD (*d* range = 0.44–0.69).

DISCUSSION

Using data from a large, contemporary, nationally representative sample of US military veterans and a recently proposed working case definition of subthreshold PTSD, which accounts for *DSM-5* PTSD symptom criteria as well as symptom duration and distress/impairment,[16] the present study examined the epidemiology of subthreshold PTSD. Results revealed that 3.9% of veterans had subthreshold PTSD in their lifetimes, which is consistent with the 3.5% prevalence observed in a comprehensive global study of 13 countries and nearly 24,000 trauma-exposed individuals, which used clinical interviews to estimate the prevalence of *DSM-5* subthreshold PTSD on the basis of meeting diagnostic criteria for either 2 or 3 PTSD symptom clusters.[7] Based on population benchmarks from the US Census Bureau,[13] our observed 3.9% prevalence of subthreshold PTSD suggests that, in addition to the approximately 1.5 million US veterans with full PTSD, an additional approximately 700,000 veterans may be affected by clinically significant symptoms of PTSD in their

Table 4.

Mental Health Variables by Lifetime PTSD Screening Status in US Veterans[a]

	Subthreshold PTSD vs no PTSD	Full PTSD vs no PTSD	Full PTSD vs subthreshold PTSD
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Lifetime measures			
Major depressive disorder	3.26 (2.22–4.77)***	11.08 (8.25–14.89)***	3.55 (2.27–5.56)***
Alcohol use disorder	1.36 (0.96–1.92)	1.80 (1.38–2.34)***	1.83 (1.18–2.84)**
Drug use disorder	2.08 (1.39–3.12)***	2.67 (1.99–3.56)***	1.56 (0.97–2.50)
Suicide attempt	2.22 (1.17–4.20)*	2.11 (1.37–3.23)***	1.35 (0.65–2.82)
Lifetime mental health treatment	2.32 (1.61–3.34)***	5.29 (3.94–7.10)***	2.42 (1.52–3.86)***
Current measures			
Major depressive disorder	1.74 (1.04–2.92)*	6.60 (4.84–8.99)***	4.56 (2.60–8.00)***
Generalized anxiety disorder	2.65 (1.62–4.36)***	5.47 (3.96–7.57)***	2.25 (1.30–3.89)**
Alcohol use disorder	1.71 (1.10–2.66)*	1.15 (0.82–1.61)	0.84 (0.48–1.50)
Drug use disorder	1.03 (0.60–1.75)	1.67 (1.19–2.34)**	1.73 (0.93–3.22)
Suicidal ideation	2.28 (1.43–3.65)***	5.25 (3.84–7.17)***	2.49 (1.49–4.18)***
Current mental health treatment	3.32 (2.21–5.01)***	5.23 (3.88–7.05)***	1.76 (1.06–2.92)*

[a]ORs for lifetime psychiatric disorders were adjusted for sociodemographic, military, mental health treatment, and trauma characteristics that differed by group at the bivariate level ($P < .01$). Current psychiatric disorders and suicide-related variables were further adjusted for lifetime major depressive, alcohol, and drug use disorders. ORs for lifetime mental health treatment were adjusted for lifetime psychiatric and substance use disorders; ORs for current mental health treatment were adjusted for current psychiatric and substance use disorders.

Statistically significant associations: *$P < .05$, **$P < .01$, and ***$P < .001$.

Abbreviations: OR = odds ratio, PTSD = posttraumatic stress disorder.

lifetimes and may be at heightened risk of developing full PTSD.[11]

Consistent with prior population-based studies of US military veterans,[4,9,29] subthreshold PTSD was associated with intermediately elevated odds of screening positive for lifetime and current MDD, lifetime DUD, and current MDD, GAD, and AUD, relative to veterans with no PTSD. Veterans with full PTSD generally showed an even greater elevation in odds for the majority of these psychiatric disorders, though veterans with subthreshold vs full PTSD did not differ with respect to odds of lifetime DUD and current AUD. The overall increased likelihood of other psychiatric disorders in the full PTSD group could be related, in part, to the types of traumas experienced. Veterans with full PTSD were more likely to endorse interpersonal traumas such as assault as their index event, whereas veterans with subthreshold PTSD group were more likely to endorse noninterpersonal traumas, such as natural disasters, which is consistent with research linking interpersonal traumas to higher levels of distress and greater likelihood of developing PTSD.[7,30,31] Veterans with full PTSD also endorsed higher rates of adverse childhood experiences and direct trauma burden. Higher rates of trauma exposure could have contributed to a process of "stress sensitization"[32] whereby veterans with a history of full PTSD may have been more vulnerable to subsequent stressors and thus more likely to develop other mental health problems.

Table 5.

Multivariable Analyses of Functioning Measures by Lifetime PTSD Status in US Veterans[a]

	No PTSD (1) N = 3,615 weighted % = 87.7%	Partial PTSD (2) N = 159 weighted % = 3.9%	Full PTSD (3) N = 295 weighted % = 8.4%	χ^2 or F	Effect size (Cohen d)		
					Partial PTSD vs no PTSD	Full PTSD vs no PTSD	Full PTSD vs partial PTSD
Mental functioning	50.7 (0.3)	47.6 (0.6)	42.2 (0.5)	188.13***	0.18	0.49	0.68
Psychosocial difficulties	13.1 (0.6)	22.8 (1.2)	29.7 (0.9)	198.50***	0.28	0.49	0.44
Cognitive functioning	86.3 (0.6)	77.1 (1.1)	67.1 (0.8)	294.26***	0.28	0.61	0.69

[a]Multivariable analyses are adjusted for sociodemographic, military, mental health treatment, and trauma characteristics, as well as psychiatric and substance use disorders, which differed between groups in bivariate analyses ($P < .01$).

Statistically significant associations: *$P < .05$, **$P < .01$, and ***$P < .001$.

Abbreviation: PTSD = posttraumatic stress disorder.

Veterans with subthreshold PTSD were more than twice as likely to endorse current SI relative to those with no PTSD, even after adjusting for sociodemographic, military, and trauma exposure variables, as well as lifetime psychiatric and substance use disorders. Moreover, the odds of having attempted suicide did not differ between veterans with subthreshold PTSD relative to those with full PTSD, with both groups being twice as likely as veterans with no PTSD to report this history. When considered alongside the finding that veterans with subthreshold PTSD were more likely than those with no PTSD to have ever and currently be engaged in mental health treatment, these findings suggest that subthreshold PTSD is associated with a clinically significant and enduring effect on mental health and that it may be an important, and overlooked, indicator of suicide risk and need for mental health treatment. Consistent with a dimensional conceptualization of PTSD,[33] these findings support recent calls to add a subthreshold course specifier to the *DSM-5*,[34] which may help inform suicide prevention efforts by enhancing risk stratification on the basis of the full spectrum of PTSD symptoms.

In line with prior work,[8,9] after adjusting for the aforementioned covariates, subthreshold PTSD was also associated with moderate decrements in mental, psychosocial, and cognitive functioning (*d*'s ranged from 0.18 for mental functioning to 0.28 for psychosocial functioning), relative to the no PTSD and full PTSD groups. This "dose-response" association underscores the utility of assessing, monitoring, and treating PTSD symptoms in veterans who do not meet full diagnostic criteria for PTSD, as these symptoms may contribute to functional difficulties in various life domains. Increased identification of veterans with subthreshold PTSD may also help advance the overall goal of the Veterans Health Administration's Whole Health initiative,[35] which aims to promote overall functioning and well-being in the veteran population.

The results of this study should be interpreted in the context of 2 limitations. First, although our case definition of subthreshold PTSD included the assessment of duration and distress/impairment in addition to symptom criteria, it relied on a self-report measure; assessment of PTSD symptoms and related measures using structured clinical interviews may yield differences in the prevalence and correlates of subthreshold and full PTSD. Second, consistent with the sociodemographic composition of the general US veteran population, our sample was primarily male, older, and non-Hispanic white. Further research is needed to examine the epidemiology of subthreshold PTSD in more sociodemographically diverse subsets of veterans, active-duty service members, and other trauma-exposed people.

Notwithstanding these limitations, this study provides an up-to-date characterization of the epidemiology of subthreshold PTSD using *DSM-5* criteria in a nationally representative sample of US military veterans. Overall, results indicate approximately 4% of US veterans experience subthreshold PTSD in their lifetimes, which is associated with elevated psychiatric burden, suicide risk, and functional difficulties. They also underscore the need to detect, monitor, and possibly treat subthreshold PTSD in this population. Additional research is needed to elucidate the longitudinal course of subthreshold PTSD symptoms, identify biopsychosocial mechanisms underlying the development of subthreshold vs full PTSD, and evaluate the efficacy of trauma- and non–trauma-focused treatments on mitigating subthreshold PTSD symptoms in veterans and other trauma-affected populations.

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