

# Prevalence of Complex Post-Traumatic Stress Disorder in Serving Military and Veteran Populations: A Systematic Review

TRAUMA, VIOLENCE, & ABUSE  
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## Abstract

Serving military personnel and veterans are known to be at elevated risk of post-traumatic stress disorder (PTSD), and some veterans have been shown to respond poorly to current standard treatments. Evidence so far suggests that according to the 11th edition of the International Classification of Diseases and Related Health Problems guidelines, complex PTSD (CPTSD) may be of higher prevalence in the general population than PTSD. The aim of the study was to investigate the prevalence of CPTSD compared to PTSD in serving and ex-serving military populations. A systematic review was conducted with the search criteria set to peer-reviewed English language journal articles, focusing on serving military or veteran populations, reporting on the prevalence of CPTSD, not restricted by year. Four comprehensive databases (Psycinfo, Pubmed, CINAHL, and Embase) were searched. Of the 297 identified articles, 16 primary studies were eligible for inclusion. The review was registered in the PROSPERO database (CRD42023416458), and results were reported based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Of the 16 studies, 13 demonstrated higher prevalence of CPTSD than PTSD. Studies were predominantly veteran focused. Prevalence of CPTSD ranged from 5% to 80.63%, while prevalence of PTSD ranged from 3.8% to 42.37%. There was high heterogeneity in study populations, preventing meta-analysis. This is the first systematic review to assess the prevalence of CPTSD in serving military and veteran populations, with the findings demonstrating a higher rate of CPTSD compared to PTSD. It is hoped that the review will assist clinicians and military and veteran health services with appropriate assessment, diagnosis, and intervention for those affected by CPTSD, as well as PTSD.

## Keywords

military, veterans, complex post-traumatic stress disorder, post-traumatic stress disorder

## Introduction

According to the 2021 census, almost 600,000 Australians have served, or are currently serving in the Australian Defence Force (ADF) with 84,865 currently serving and 496,276 veterans recorded at that time (Australian Bureau of Statistics, 2021). Mental health disorders are known to be a prominent issue in both serving and veteran communities. The 2018 Mental Health Prevalence Report estimated that almost three out of four transitioned ADF members have met criteria for a mental disorder in their lifetime (Van Hooff et al., 2018). Further to this almost one in four transitioned ADF members was estimated to have met criteria for a post-traumatic stress disorder (PTSD) diagnosis. Rates of PTSD have also been demonstrated to be higher in deployed than non-deployed veterans in studies from the United Kingdom, Canada, the United States of America, and Australia (Hoge et al., 2014; Stevelink et al., 2018; Thompson et al., 2016; Van Hooff et al., 2018).

There is evidence to demonstrate that some veterans do not respond as well to standard treatments for PTSD compared to members of the general public (Kitchiner et al.,

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2012). This presents obvious problems given the elevated rates of PTSD in this population. There is therefore a need to understand the complexities and contributing factors in order to better understand and treat PTSD in military and veteran groups. There has been some evidence to demonstrate poorer response to treatment associated with factors such as PTSD severity, mental health co-morbidities, and childhood adversity (Murphy & Smith, 2018; Phelps et al., 2018; Richardson et al., 2014). However, the current understanding of PTSD may be limiting treatment outcomes.

In the 11th edition of the International Classification of Diseases and Related Health Problems (ICD-11), significant changes have been made to those disorders termed “specifically associated with stress” (World Health Organization, 2022). The established diagnosis of PTSD is joined by a related one, namely complex PTSD (CPTSD). CPTSD has its origins in the seminal work of Herman (1992). Herman posited that PTSD was not sufficient in its classification to embody the true multifaceted symptomatology expressed by individuals who had experienced prolonged and sustained traumatic life events; particularly those which had occurred in early and formative years. As specified in ICD-11, CPTSD retains the core diagnostic components of PTSD (characterized in ICD-11 by three symptom groupings of re-experiencing of trauma, avoidance of traumatic reminders, and a heightened sense of threat), and indeed in order to receive a diagnosis of CPTSD, the PTSD criteria must be met. In addition to these criteria, symptoms must be present in three additional areas of disturbances in self-organization (DSO), comprising symptom groupings of (a) severe difficulties with affect regulation, (b) persistent negative self-image or concept, and (c) persistent difficulties in interpersonal relationships (Cloitre et al., 2013). Both the symptoms of PTSD and DSO must correspond to functional impairment (World Health Organization, 2022). Although the PTSD criteria must be met it should be noted that these are intended to be mutually exclusive diagnoses. A more restrictive approach to the PTSD diagnosis is taken by the ICD-11 (Brewin et al., 2017), which results in lower prevalence estimates (Wisco et al., 2016) compared to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), in which CPTSD is not included (American Psychiatric Association, 2013). The ICD-11 therefore provides a way of distinguishing those with more complex presentations.

Research into the prevalence of CPTSD as defined by ICD-11 criteria is now emerging. The International Trauma Questionnaire (ITQ) is a validated measure for assessment of CPTSD as defined by ICD-11 (Cloitre et al., 2018). Initial studies with this measure have demonstrated marginally higher rates of CPTSD than PTSD in the general population in the United States (Cloitre et al., 2019). Further studies have shown higher rates of CPTSD than PTSD in a trauma-exposed population sample in the United Kingdom (Karatzias, Hyland, et al., 2019) and in treatment-seeking adults (Karatzias et al., 2017). Exposure to childhood trauma

and multiple trauma exposures have also been demonstrated to be significant risk factors for CPTSD (Karatzias et al., 2017). There is evidence to suggest serving personnel and veterans have a higher chance of having been exposed to childhood trauma with high rates of pre-service adversity (Murphy et al., 2019). Given this, as well as the fact that combat veterans are commonly exposed to multiple traumatic war zone experiences, it is conceivable that veterans may be at elevated risk of CPTSD.

There is existing evidence suggesting that there are differences in treatment modalities effective for PTSD and CPTSD (Karatzias, Murphy, et al., 2019). While others have argued there is insufficient evidence to support this (De Jongh et al., 2016), it is clear that understanding the prevalence of CPTSD may be beneficial in guiding identification of veterans and serving personnel less likely to respond to standard PTSD treatments. Differentiating between CPTSD and PTSD is also important in order to fully understand the extent and implications of each individual's history of trauma and to subsequently tailor treatments to their individual needs.

## Aims

This study aimed to investigate the prevalence of CPTSD within current-serving military and veteran populations. The review also aimed to compare the prevalence of PTSD within the study populations where this data was available. This is the first systematic review to investigate the prevalence of CPTSD in these populations.

## Methodology

The findings of this review were reported in accordance with The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). See Supplemental File 1 for the PRISMA checklist. The review protocol was registered with and approved by PROSPERO (CRD42023416458), the international prospective register for systematic reviews. PROSPERO was also searched to ensure that a systematic review in this area was not already underway. No ethics approval was required.

## Data Sources and Search Strategy

Four databases (Psycinfo, Pubmed, CINAHL, and Embase) were searched up to and including April 6, 2023 with no start date, to identify relevant articles. Searches were carried out using the following terms:

1. Veteran and military terms: “veteran\*” OR “military” OR “ex-military” OR “soldier\*” OR “defence” OR “defense” OR “serving personnel” OR “servicem\*n” OR “armed forces”

2. CPTSD terms: “C\*PTSD” OR “CPTSD” OR “complex PTSD” OR “complex post\*traumatic stress disorder”

These were then combined in the format 1 AND 2.

### Eligibility Criteria

Studies were included if they

1. Included serving military or veteran populations.
2. Reported the prevalence of CPTSD (consistent with ICD-11 diagnostic criteria; World Health Organization, 2022) or had sufficient data to calculate this.
3. Were published in English with full-text version readily available.

Exclusion criteria were as follows:

1. Papers classified as reviews, commentaries, presentations or book reviews, and studies conducted in other populations.
2. Studies where the CPTSD diagnosis did not reflect the ICD-11 diagnostic criteria.
3. Gray literature.

### Data Extraction and Study Selection

Databases were searched independently by two authors (R.G. and M.K.). Literature references were exported to EndNote where duplicates were identified and removed. Studies were screened using a two-stage process: based on title and abstract initially within EndNote, with full texts sought for articles deemed eligible for further review. After final identification of those articles meeting the selection criteria, the lists were compared by the two authors with disagreements resolved by discussion. The wider research team was available for further discussion if needed but was not required. The following data were extracted from all included studies: author names, study setting and location, sample size and population, year of publication, CPTSD and PTSD measure utilized, prevalence of CPTSD, and where available PTSD prevalence. Other demographics and variables presented in the included studies were also extracted in order to identify any findings suggesting potential moderators or risk factors for the prevalence of CPTSD.

### Data Analysis

Included articles were read with all relevant data then synthesized for the review including use of tables where appropriate. Discussion of the data then occurred, primarily focusing on the prevalence of CPTSD and PTSD within the studies but also addressing other variables of interest which were identified. A meta-analysis was not completed due to

significant heterogeneity within the study populations therefore narrative synthesis was undertaken.

### Quality of Studies

All studies were critically assessed for suitability for inclusion using the Joanna Briggs Institute Critical Appraisal Checklist for Studies Reporting Prevalence Data (JBI Checklist; Munn et al., 2020). This critical appraisal tool is widely used and is considered appropriate in studies of this type (Ma et al., 2020). All studies were assessed as being valid for inclusion based on the domains in the JBI Checklist. The table showing the outcomes from this assessment can be found at Supplemental File 2.

### Results

As shown in Figure 1, from a yield of 297 records, 173 were screened on title and abstract and 41 records underwent full-text review. Eighteen of these articles met eligibility criteria and were deemed suitable for inclusion using the JBI Checklist. However, 2 of the 18 were secondary analysis papers of primary papers already included; therefore, this left 16 primary studies included in the review.

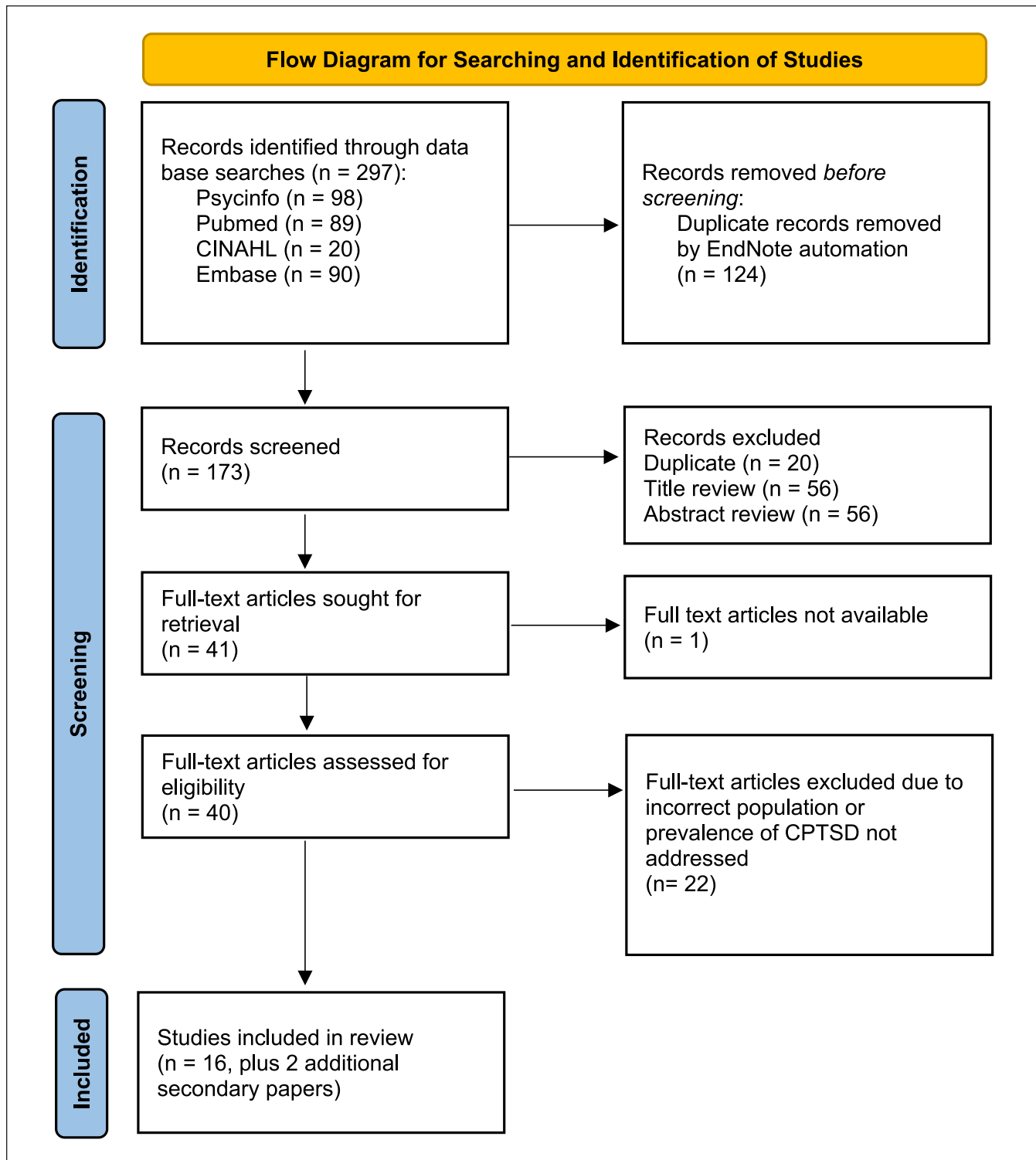
### Study Characteristics

The characteristics for the 16 included studies are provided in Table 1 (together with the two secondary analyses). Country of origin was variable with studies included from seven countries, with the United Kingdom contributing the highest number of studies. Study samples ranged in size from 160 to 2,353 (not including civilians). Mean age across all studies ranged from 26 to 63.8 and was not reported in four studies. Studies were predominantly veteran focused with 15 of 16 containing veteran populations and only two (Howard et al., 2021; Mordeno et al., 2019) assessing current-service personnel. All studies providing population data were male dominated other than one Israeli study focusing on female veterans (Zerach & Levi-Belz, 2023; Zerach et al., 2019).

The study samples varied, with 8 of the 16 studies involving participants who were either treatment seeking or in a treatment program. Three of the studies appeared to be more representative of the wider veteran/serving population while three others only included participants with a background of combat, trauma, or experience of being a prisoner of war (POW). There was a further comparison of former POWs with non-POWs (Zerach et al., 2019), and one study (Zerach, 2023; Zerach & Levi-Belz, 2023) assessed combat exposed versus non-combat exposed veterans.

### Outcome Measures

The ITQ was the primary measure used for assessing rates of PTSD and CPTSD in 12 of the 16 studies included. The ITQ is an 18-item, self-report diagnostic measure of the core



**Figure 1.** PRISMA flow diagram.

PRISMA=Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

**Table I. Study Characteristics and Data.**

Study	Country	Population	PTSD/CPTSD Measure	CPTSD Prevalence	PTSD Prevalence	Study Design and Topic	Other Findings
Armour et al. (2021)	United Kingdom	732 Veterans residing in NI 86.48% Army, 10.66% RN, 7.92% RAF, 1.64% RM 90% M, 10% F Mean age 55.88 (SD 10.59) 99.3% white	ITQ	22.54% (165)	6.28% (46)	Cross-sectional, study of factor construct validity	Trauma: 82% fire/explosion 69% "any other situation... seriously injured or life in danger" 63% "present when another person killed, seriously injured or sexually/physically assaulted" 55% "repeated extreme exposure to horrifying details of another" 55% "death of a family friend/partner/very close due to accident/homicide/suicide" Average 6.39 trauma types (SD 3.05)
Cloitre et al. (2021)	United States	254 U.S. veterans enrolled in web-based treatment program (mostly rural) 61.8% M, 37.6% F, 0.6% other Mean age 44.2 (SD 11.94) 63.9% white, 17.5% black, 5.6% Hispanic, 7.9% others	ITQ, PCL-5, DERS, IIP-32	52.8% pre-treatment, 22% mid, 12.6% post	18.1% pre-treatment, 13.8% mid, 11% post	Cross-sectional, study of ITQ as measure of change	Deployed: 11.1% Vietnam, 25.8% Persian Gulf, 35.9% Iraq/Afghanistan Average trauma events 7.8 (SD 3.05) 81.4% Sudden death of loved one 75.5% physical assault 75.9% transportation accident 53% combat experience 34% childhood sexual abuse 47% childhood physical abuse
Currier et al. (2021)	United Kingdom	403 UK treatment-seeking veterans with a MH diagnosis 86.5% Army, 6.7% RN, 6.9% RAF Average service 14.6 years (SD 9) 95% M, 5% F Mean age 52.64 (SD 11.34)	ITQ	57.2%	13.3%	Cross-sectional, study of link between moral injury and CPTSD	No. of deployments: 0 = 9.3%, 1 = 54.4%, 2 = 19.6%, 3 or more = 16.7% Greater rates of moral injury reported in those with CPTSD vs. PTSD
Dighton et al. (2023)	United Kingdom	2,353 U.K. veterans and 2,612 non-veterans 64.7% Army, 21.2% RN/RM/RAF, 13.7% RAF 93.5% M, 6.2% F, 0.3% other 92.5% white, 7.5% other Mean age 46.69 (SD 13.21)	ITQ	26.6% (vs. 5.1% non-veterans)	8.6% (vs. 2.3% non-veterans)	Cross-sectional, study into gambling in veterans	Other dx in veteran group: Depression 69.6% (mild-severe) Anxiety 61.3% (mild-severe) Alcohol dependence 14.5% Deployed: 15.7% Afghanistan, 14.6% Iraq (TEUIC), 16.4% Bosnia and Kosovo, 17.1% Falklands, 33.9% NI, 8.5% Gulf, 43.1% other deployment, 15.8% no deployment Average 6.13 traumatic events (SD 3.02)
Folke et al. (2019)	Denmark	1,541 treatment-seeking Danish veterans 93.8% M Mean age 37 (SD 9.8)	PCL-C, DASS—Items chosen to match ITQ criteria	17.3%	14.1%	Cross-sectional, latent profile analysis	30% childhood trauma (15.7% witnessing violence, 22.8% physical punishment, 4.3% sexual abuse) 57.2% combat or war trauma 8.5% sudden unexpected death
Folke et al. (2021)	Denmark	294 treatment-seeking veterans 92.5% M Mean age 39.7 (SD 9.8)	ITQ (Danish translation)	30.3%	15.3%	Cross-sectional replication of Folke et al. (2019) using ITQ	28.6% childhood trauma 100% at least one adult trauma 78.2% combat exposure
Howard et al. (2021)	Australia	458 current and ex-serving ADF participating in PTSD treatment 7.2% F, 92.6% M 13.5% serving, 86.5% veterans Mean age 52.12 (SD 6.06) All participants male	PCL-5, ITQ (DSO subset)	78.2%	21.8%	Cross-sectional, prevalence study, NB: participating in PTSD course	Of CPTSD class post-treatment: 50.6% remain CPTSD, 12% move to PTSD, 37.4% met criteria for neither Of PTSD class: 27% remain PTSD, 16% move to CPTSD, 57% met criteria for neither
Letica-Crepulja et al. (2020)	Croatia	160 Croatian war (combat) veterans with PTSD Mean age 52.12 (SD 6.06)	ITQ, LEC-5	80.63%	19.37%	Cross-sectional prevalence study, NB: patients from PTSD referral center	Average deployment duration 37.3 months, 47% previously hospitalized, 76.25% in PTSD program Average 8.38 traumas (SD 3.34) and 2.81 interpersonal trauma (SD 1.27) CPTSD group significant increase in divorce (19.35% vs. 5.43% in PTSD)
Mordeno et al. (2019)	Philippines	450 soldiers in Filipino armed forces 98.9% M Mean age 30.11 (SD 7.47)	ITQ (translated)	16.4%	36.7%	Cross-sectional, factor structure analysis	All combat veterans with at least two armed encounters

(continued)



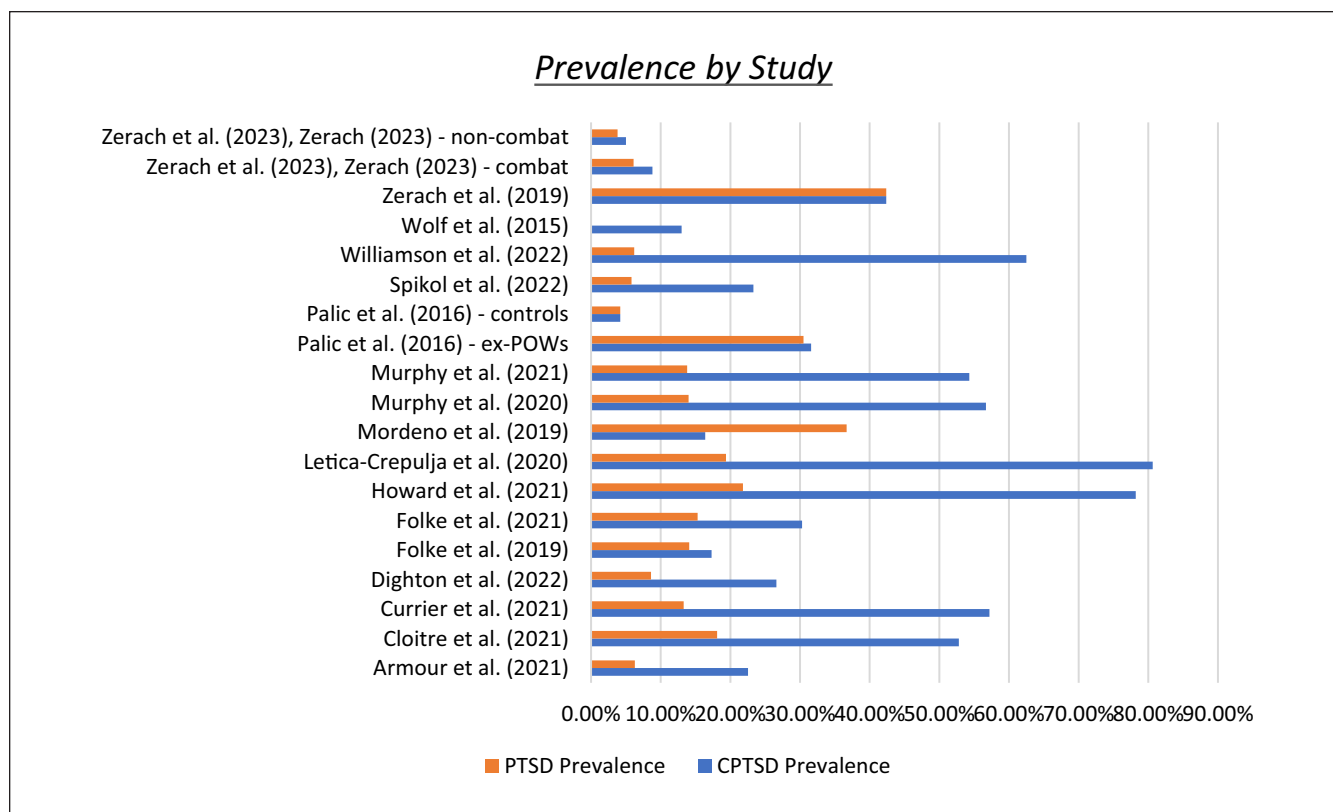
Table 1. (continued)

Study	Country	Population	PTSD/CPTSD Measure	CPTSD Prevalence	PTSD Prevalence	Study Design and Topic	Other Findings
Murphy et al. (2020, 2021)	United Kingdom	177 U.K. treatment-seeking veterans 86.5% Army, 6.7% RN, 6.9% RAF 95.1% M 75.8% aged 45 or over	2020: ITQ, CTQ, LEC 2021: ITQ	2020: 56.7% 2021: 54.3%	2020: 14.0% 2021: 13.8%	2020: Cross-sectional, study assessing validity of ITQ 2021: Cross-sectional, study sample as above, assessing risks and comorbidity	2020: Childhood trauma: 51.2% physical assault, 30.2% sudden death of someone close, 17.5% unwanted/uncomfortable sexual experience Adult trauma: 86.4% combat/warzone, 79.2% fire/explosion, 78.6% sudden death of someone close 2021: CPTSD vs. PTSD: Combat: 68.8% vs. 60% Emotional bullying: 55.8% vs. 37.5% Physical assault: 49.4% vs. 22.7% Sexual harassment: 8.2% vs. 10% Sexual assault: 9.7% vs. 10% Childhood adversity: 55.7% vs. 45.8% Paper compares several populations, not exclusively military/veteran Results showed no significant association between PTSD and ACE
Palic et al. (2016)	Denmark	Various samples including: 177 Israeli army veterans (ex-POWs 1,973), 118 matched non-POWs	PTSD-I, HITQ, SIDES	31.6% ex-POWs, 4.2% veteran controls	30.5% ex-POWs, 4.2% veteran controls	Cross-sectional, prevalence study	Trauma: 33.5% life-threatening illness, 40.4% accident, 23.7% natural disaster, 82% fire/explosion, 24.1% exposure to toxic substance, 20.1% physical force/weapon in robbery/mugging, 34.5% close person lost to accident/homicide/suicide, 11.1% sexual assault, 6.1% attempted sexual assault, 32.8% childhood physical assault, 29.8% other physical assault, 50.5% threatened with a weapon, 22.5% caused harm to other, 65.4% present when other killed/serious injury, 52.8% repeat/extreme exposure to gruesome/horrifying details, 70.1% other serious injury/life in danger 42.2% depression, 35% anxiety, 56.9% SI, 19% suicide attempts 80.7% Common mental disorder, 41.9% anger problem, 22.6% OCD, 32% physical health problem, 55.9% harmful drinking, 25.2% heavy drinking, 10.3% substance use, 16.4% gambling, 79.1% loneliness CPTSD showed highest rate of comorbidity in most
Williamson et al. (2023)	United Kingdom	428 U.K. treatment-seeking veterans 82.5% Army, 11% RN, 6.5% RAF 97.4% M, 2.6% F Mean age 50.4 (SD 10.9) 94.7% white, 5.3% other	ITQ	62.5%	6.2%	Cross-sectional, health and wellbeing study	Civilians reported high trauma rates—89.7% one or more DSM Criterion A events Deployments: 75% Operation Enduring Freedom/Iraq Freedom, 15% Vietnam, 4% Operation Desert Storm
Wolf et al. (2015)	United States	323 U.S. veterans cf. with 2,953 civilians, cross-sectional Veterans: 61% M, mean age 44, 80% white Civilians: 52% F, 75% white	NSES-matched with ICD-11 criteria	13% veteran, 0.6% community	Previous study found 34.4% and 2.3% PTSD prevalence in same sample (not mutually exclusive)	Cross-sectional, prevalence and structural study	
Zerach et al. (2019)	Israel	183 Israeli veteran ex-POWs (1973 war) Mean age at final follow-up 63.8 (SD 3.4)	PTSD-I, SCL-90, BSI	42.37%	42.37%	Longitudinal study based on three class structure	Psychological suffering during captivity shown to be statistically significant predictor of CPTSD vs. PTSD
Zerach and Levi-Beitz (2023) <sup>a</sup> , Zerach (2023)	Israel	1,613 Female Israeli veterans, cross-sectional 885 combat veterans, 728 non-combat Combat: Mean age 26 (SD 4.8) Non-combat: Mean age 26.06 (SD 4.63)	ITQ	8.8% Combat, 5% non-combat	6.1% Combat, 3.8% non-combat	2022: Cross-sectional study addressing moral injury and psychological distress 2023: Cross-sectional study assessing ACE and military trauma	2022: Exposure to potentially morally injurious events found to significantly contribute to PTSD and CPTSD 2023: Finding of significant positive relationships between number of ACEs and PTSD and CPTSD

Note. ACE = adverse childhood event; ADF = Australian Defence Force; DSO = disturbances in self-organization; ITQ = International Trauma Questionnaire; POW = prisoner of war; F = female; M = male; NI = Northern Ireland;

PTSD = post-traumatic stress disorder; CPTSD = complex PTSD; PCL-5 = PTSD Checklist for DSM-5; RAF = Royal Air Force; RM = Royal Marines; RN = Royal Navy; DERS = Difficulties in Emotion Regulations Scale; LEC-5 = Life Events Checklist for DSM-5; PCL-5 = PTSD Checklist for DSM-5; PTSD-I = Post-traumatic Stress Disorder Inventory; HTQ = Harvard Trauma Questionnaire; IIP-32 = Inventory of Interpersonal Problems 32 item version; SIDES = Structured Interview for Disorders of Extreme Stress; SLESQ = Stressful Life Events Screening Questionnaire adapted for DSM-5; SD = standard deviation; SI = suicidal ideation; MH = mental health; SCL-90 = Symptom Checklist-90; SDBSI = Brief Symptoms Inventory; CTQ = Childhood Trauma Questionnaire; RFA = royal fleet auxiliary; PCL-C = PTSD Checklist Civilian Version IV; DASS = Depression, Anxiety and Stress Scales; NSES = National Stressful Events Survey.

<sup>a</sup>Indicates primary study and additional secondary analysis paper.



**Figure 2.** Prevalence of PTSD and CPTSD by study.

Note. PTSD = post-traumatic stress disorder; CPTSD = complex PTSD.

features of PTSD (questions 1–9) and CPTSD (questions 10–18). It has shown consistency with the principles of ICD-11 and demonstrated diagnostic rates in line with prior findings for both diagnoses (Cloitre et al., 2018).

### Prevalence Estimates

Study prevalence values were calculated based on probable diagnoses of PTSD and CPTSD using the measures as above. Full results are presented in Table 1. Prevalence of CPTSD ranged from 5% (in non-combat Israeli veterans; Zerach & Levi-Belz, 2023) to 80.63% (in Croatian war veterans with existing diagnosis of PTSD; Letica-Crepulja et al., 2020). Prevalence of PTSD ranged from 3.8% (in non-combat Israeli veterans; Zerach & Levi-Belz, 2023) to 42.37% (in Israeli veteran ex-POWs; Zerach et al., 2019). In 13 of the 16 studies the prevalence of CPTSD was higher than PTSD, with one study demonstrating equal prevalence (Zerach et al., 2019) and one study not reporting a valid prevalence of PTSD (Wolf et al., 2015). As can be seen in Figure 2, the differences between the two values are often substantial. Only one study demonstrated a PTSD prevalence greater than that of CPTSD, with that study focusing on active serving Filipino

**Table 2.** Summary of Critical Findings.

1. CPTSD had a higher prevalence than PTSD (13 out of 16 studies demonstrated this).
2. The prevalence of CPTSD ranged from 5% to 80.63%, while prevalence of PTSD ranged from 3.8% to 42.37%.

Note. PTSD = post-traumatic stress disorder; CPTSD = complex PTSD.

soldiers (Mordeno et al., 2019). In this case a pooled prevalence is not appropriate due to the heterogeneity associated with these studies. Table 2 outlines the critical finding from this study.

### Other Findings

A number of other findings of interest were extracted. In regard to the role of childhood adversity, the results were mixed. Murphy et al. (2021) contrasted trauma types in those with each diagnosis, demonstrating higher rates of childhood adversity and more experiences of emotional or physical bullying in their military careers in the CPTSD group. Palic et al. (2016) were able to demonstrate no significant

association between these diagnoses and adverse childhood events (ACEs), whereas Zerach (2023) conversely found significant positive relationships between ACEs and both PTSD and CPTSD.

The role of moral injury (MI) was also explored in some studies. Zerach et al. (2019, 2023) demonstrated that psychological suffering during captivity is a significant predictor of CPTSD versus PTSD, and that morally injurious events are a significant contributor to both. Currier et al. (2021) also studied MI but found evidence of greater MI in those with CPTSD versus PTSD.

Williamson et al. (2023) found that those with CPTSD showed higher rates of most mental health co-morbidities compared with those with PTSD. Letica et al. (2020) found a significant increase in divorce in those with CPTSD versus PTSD.

## Discussion

The purpose of this systematic review was to investigate the prevalence of CPTSD in serving military and veteran populations. This is the first systematic review to assess the prevalence of CPTSD in these populations. In 13 of the 16 primary studies, the prevalence of CPTSD was higher than that of PTSD. While in some cases the difference between the two values is small, in others it was profound. Although this area of research is still emerging, due to the relatively recent change to the diagnosis of CPTSD, it appears likely that in veteran groups the prevalence of CPTSD may indeed be higher than that of PTSD. While there is awareness of the high prevalence of PTSD in veteran communities, this presents obvious implications in care and treatment as CPTSD may not be routinely considered or assessed for.

In terms of measures used to estimate prevalence, 12 of the 16 studies utilized the ITQ, an established and reliable self-report measure (Cloitre et al., 2018). As noted by Currier et al. (2021) the ITQ was not designed to make a diagnosis without a clinical interview, and it is important therefore to be aware that the diagnoses in these studies were not clinician confirmed. It is somewhat reassuring in terms of consistency that the majority of studies have used the same, evidence-based measure to make the estimates. It is also interesting to note, however, that the studies which did not utilize ITQ demonstrated prevalence rates of CPTSD and PTSD which were much closer than those in other studies (Folke et al., 2019; Palic et al., 2016; Zerach et al., 2019). In order to ascertain the true measure of the difference in prevalence between these two disorders, a study utilizing clinician confirmed rather than probable diagnoses would be necessary.

The studies in this review were inclusive, covering populations varying from ex-POWs in a 1973 war to current-service personnel, including various conflicts, various service

branches, and several different countries. Also included are those with combat and non-combat backgrounds, and in two studies, comparison is even made with civilians. That such a variety of veteran populations is included, with agreement across the majority of studies, provides some confidence in the likelihood of CPTSD being more prevalent in veterans than PTSD. It should be noted though that a number of the included studies are restricted to patients seeking treatment, with existing mental health diagnoses or who have experienced particular traumas. It is therefore difficult to extrapolate the prevalence values to the wider military and veteran populations. In regard to diversity, the majority of the studies were based on predominantly male, or all male, samples. While this reflects the gender differences in military and veteran populations, it also means caution must be exercised in generalizing results to female populations. Table 3 outlines key findings and implications as a result of this systematic review.

## Limitations

A number of limitations were observed. The lack of available data regarding CPTSD in comparison to that of PTSD. PTSD is a well-established diagnosis whereas CPTSD is a new and ICD-11 only diagnosis. Prevalence studies are therefore more difficult to carry out in that significantly fewer confirmed CPTSD diagnoses have been made. An increase in the number of available studies, particularly utilizing clinician confirmed diagnoses, would improve confidence in the conclusions drawn. There is particularly limited data available regarding serving personnel with the majority of studies targeting veteran populations.

From a methodological perspective, the large variability in study population, and particularly the restricted criteria for inclusion within a number of the studies, resulted in sufficient heterogeneity that meta-analysis was inappropriate. This limited the ability to find a pooled prevalence for the existing studies. The studies included lacked clinician confirmation of diagnoses and relied on self-report measures, which are more open to bias.

## Conclusion

The elevated prevalence of PTSD in the military and veteran populations compared to civilian populations is well established. However, there is significantly less data available regarding the prevalence of CPTSD in these same populations. The studies assessed in this review suggest that CPTSD may in fact be more prevalent than PTSD within the veteran population, with limited data available regarding serving personnel. Further research using medically confirmed diagnoses is required in order to make this claim with confidence. This could have particular clinical relevance due to the suggestion that different treatment



**Table 3.** Implications for Practice, Policy, and Research.

Area	Implications
Practice	<ul style="list-style-type: none"> <li>The current review synthesizes the research for clinicians and outlines that CPTSD is more common than initially thought, with a higher rate than PTSD in military and veteran populations.</li> <li>Clinicians are therefore encouraged to routinely assess for symptoms consistent with CPTSD in their military and veteran clientele, in order to gain a thorough understanding of the impact of these symptoms and provide the most appropriate evidence-based treatment.</li> <li>Current evidence suggests that CPTSD may benefit from different treatment modalities than PTSD (Karatzias, Murphy, 2019b). There is a need to develop and establish appropriate gold-standard interventions within the military and veteran populations.</li> </ul>
Policy	<ul style="list-style-type: none"> <li>Given the evidence suggesting different treatment modalities are effective for CPTSD compared to PTSD, CPTSD should be considered as a DSM diagnosis despite only being proposed at present.</li> <li>Screening for pre-service adversity and trauma by the Department of Defence staff during recruitment may help identify predisposing factors for CPTSD and commensurate support can be provided.</li> </ul>
Research	<ul style="list-style-type: none"> <li>Existing studies are based on “probable” diagnosis using self-report measures. A more accurate measurement of prevalence could be made by utilizing validated psychometric measures, full clinical assessment by clinicians, and confirmed diagnosis.</li> <li>There is very little study data available regarding active service rather than veteran personnel, along with female military and veteran samples. Differentiating these rates could lead to important discoveries.</li> <li>Further studies are required in order to gain an accurate reflection of the prevalence of CPTSD within military and veteran populations and how this compares with that of PTSD. This is particularly true given the variability in studies and that many studies are based on veterans already in treatment or exposed to specific traumas.</li> <li>Further studies are required in order to establish appropriate and effective treatments for CPTSD in military and veteran populations.</li> </ul>

Note. PTSD = post-traumatic stress disorder; CPTSD = complex PTSD.

modalities may be effective with CPTSD and it is suggested that clinicians consider this as a possible diagnosis during assessment and treatment.

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### Supplemental Material

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