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Review article

Prevalence of Complex Post-Traumatic Stress Disorder (CPTSD): A Systematic Review and Meta-Analysis

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ABSTRACT

This systematic review and meta-analysis aimed to assess complex post-traumatic stress disorder (CPTSD) pooled prevalence across global and specific populations (e.g., military, clinical) and examined potential gender differences. We systematically searched five major databases (Web of Science, Scopus, PsycNET, Psych and behavioural sciences collection, PubMed) up to 31/01/2025 for peer-reviewed articles reporting CPTSD prevalence using validated ICD-11 assessments. Articles were assessed for quality using the JBI prevalence checklist; no studies were excluded. In total 138,681 participants from 167 studies were analysed. Gender-specific analyses were conducted where prevalence was reported by gender. A random-effects model with the *meta* package in *R* estimated the global pooled prevalence of CPTSD at 6.2 % (95 % CI [3.7 %, 10.3 %]). Prevalence varied across specific trauma-exposed population groups; highest in clinical (44.7 %), domestic violence/sexual abuse survivors (40.0 %), and military (36.4 %) samples, and lowest in emergency services (7.4 %). No gender difference in prevalence was observed. Findings suggest the support systems or selection processes inherent in emergency services may lower CPTSD risk. Conversely, extreme trauma, limited support, or cultural factors may explain elevated prevalence in military samples. High CPTSD prevalence in clinical samples highlight trauma's pervasive impact, underscoring the need for targeted treatment addressing both CPTSD and comorbidities (e.g., mood, anxiety disorders). The absence of gender differences contrasts with typically higher PTSD rates in women. Limitations include inconsistent trauma definitions and lack of clinician-administered instruments. Findings highlight the need for standardised data collection and reporting, gender-specific reporting, and recognition of CPTSD as a comorbidity in clinical settings.

1. Introduction

Complex post-traumatic stress disorder (CPTSD) is a severe mental health condition that may develop after exposure to prolonged or repetitive traumatic events. It has been estimated that 70.4 % of people have been exposed to at least one traumatic event in their lifetime, with 30.5 % exposed to four or more traumatic events (Benjet et al., 2016). While in post-traumatic stress disorder (PTSD), traumatic events such as natural disasters or accidents can contribute to the onset of symptoms, the traumatic events associated with CPTSD are often interpersonal in nature, with repeated childhood abuse or interpersonal violence commonly cited as contributors to CPTSD (Beck and Sloan, 2022).

Over the past three decades, conceptualisations of CPTSD have been gradually shaped into the current cluster of symptoms outlined in the *International Classification of Diseases, 11th Revision* (ICD-11; World Health Organisation, 2019). These comprise the core PTSD symptoms of re-experiencing the traumatic event, avoiding trauma-related cues, and a persistent sense of threat. In addition to core PTSD symptoms, CPTSD comprises disturbance in self-organisation, which includes three symptom clusters—negative self-concept, disturbances in relationships, and affective dysregulation—encompassing both affective hyperactivation and hypoactivation (for a review, see Kindred et al., 2025).

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Understanding accurate prevalence rates in specific populations is crucial to understanding how to better identify CPTSD. This review examines global and population-specific prevalence of CPTSD and investigates any sex and/or gender differences in CPTSD prevalence.

The concerted effort to establish a valid and reliable diagnosis for CPTSD has culminated in not only the currently published and accepted definition in the ICD-11, but also a final iteration of the International Trauma Questionnaire (ITQ; Cloitre et al., 2018). The ITQ is the most frequently used measure of CPTSD symptoms, with established and validated scoring algorithms for identifying probable cases in line with ICD-11 criteria. The ITQ has been widely used to progress research on CPTSD and is commonly employed to estimate prevalence rates. Although much research has been undertaken on CPTSD recently, no consensus has been established on prevalence rates for CPTSD. Estimations vary widely, ranging from 1 % to 8 % in the general population and up to 50 % in mental health facility populations (Maercker et al., 2022). The absence of systematic meta-analyses of these data limits the ability to draw robust and generalisable conclusions about these estimates.

Although there are no known systematic reviews of CPTSD prevalence in the general population, several systematic reviews have been conducted to establish prevalence rates of CPTSD in specific groups of trauma-exposed populations (i.e., the prevalence of CPTSD diagnoses in groups of people known to have experienced traumatic events). These reviews include a systematic review by de Silva et al. (2021) on refugee and asylum seekers, estimating 16–38 % prevalence in treatment-seeking samples and 2.2–9.3 % in non-treatment seeking samples. Another systematic review on refugee and forcibly displaced populations estimated prevalence of between 3–51 % using ICD-11 criteria for CPTSD (Mellor et al., 2021), whereas another estimated 3–74.6 % CPTSD prevalence (Lechner-Meichsner et al., 2024). Further, a systematic review encapsulating survivors of human trafficking and modern slavery estimated CPTSD prevalence of 41 %, with studies utilising either current ICD-11 or previous diagnostic criteria (Evans et al., 2022). Further still, estimates in military samples range from 5 % to 80.6 % in one systematic review (Grinsill et al., 2024). Such wide variation in prevalence estimates hinders meaningful interpretation of the data, complicating efforts to compare studies, identify at-risk groups, and guide clinical intervention. Identifying high-risk or occupationally exposed groups could inform targeted prevention and guide clinical screening. Additionally, a meta-analysis is needed to generate accurate, generalisable prevalence estimates for CPTSD across specific populations, using consistent and current CPTSD diagnostic criteria.

Only two studies have examined sex and/or gender differences in CPTSD prevalence. An early review by Brewin et al. (2017) highlighted conflicting evidence on gender differences in CPTSD. While two studies reported higher prevalence in women in their review, two studies reporting no significant gender difference. Further, Lonnen and Paskell (2024) conducted a systematic review on sex and gender differences in clinical presentations of CPTSD, finding that eight of the nine papers reporting prevalence found no sex or gender differences. Only one study considered gender diversity, highlighting a lack of research involving gender-diverse populations who may be at elevated risk. The inconsistent prevalence rates of CPTSD in various sexes and/or genders makes it difficult to determine if gender differences exist in CPTSD, which may have clinical and research implications. Further, the absence of sex and/or gender difference in CPTSD prevalence, would constitute a key distinction between CPTSD and PTSD as PTSD has been shown to be more prevalent in women than men (Schein et al., 2021).

This systematic review and meta-analysis examined: (1) global prevalence of CPTSD; (2) CPTSD prevalence in both trauma-exposed and potentially trauma-exposed groups; (3) prevalence in specific populations (e.g., emergency services and military personnel); and (4) CPTSD prevalence by sex and/or gender to determine whether any significant sex and/or gender differences exist.

2. Methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA; Page et al., 2021) were followed to conduct a systematic search and synthesis of the literature and meta-analysis. This review was registered with the International Prospective Register of Systematic Reviews (PROSPERO; CRD42024505304).

2.1. Eligibility criteria

To be included, studies needed to (1) assess participants for CPTSD as defined by ICD-11 criteria using validated assessments or diagnostic interviews; (2) provide prevalence data, e.g., *n* or a percentage; (3) be written in English; and (4) be peer-reviewed. There were no age restrictions. Studies recruiting participants to evaluate treatment were included provided prevalence estimates were reported at baseline.

Exclusion criteria included reviews, qualitative studies, grey literature, case studies, conference abstracts, thesis dissertations, studies with $n < 10$, and studies exclusively recruiting participants with probable CPTSD. Grey literature was excluded due to variability in methodological quality, lack of peer review, limited access to extractable data, and the need to manage the volume of literature within the scope of a feasible and methodologically consistent review. Articles published prior to 2017 were excluded as they were assumed to have used draft iterations of diagnostic criteria or assessments, or earlier conceptualisations of CPTSD (e.g., Disorders of Extreme Stress Not Otherwise Specified, or DESNOS), given the official ICD-11 criteria for CPTSD were not published until 2018. To ensure consistency, studies using preliminary versions of the ITQ were excluded, unless they reported prevalence rates based solely on the finalised items of the ITQ.

2.2. Information sources and search strategy

A comprehensive and systematic literature search was first conducted on 21 November 2023 and an updated search on 31 January 2025 of five databases: Web of Science; Scopus; PsycNET; Psych and behavioural sciences collection (EBSCOhost); and PubMed. The search terms were: “complex PTSD”, “complex post-traumatic”, “CPTSD”, “enduring personality change after catastrophic event” and “disorder* of extreme stress not otherwise specified” (see Table S.1 in supplementary materials). Where available, search limiters were used to exclude papers not published in English or in peer-reviewed journals. There were no time restrictions on the searches.

2.3. Study selection process

Search results were screened for duplicates in both *EndNote Version 21* (The EndNote Team, 2013) and *Rayyan.ai* (Ouzzani et al., 2016) by PAH. Remaining articles were title and abstract screened by PAH and KdB in *Rayyan.ai* with conflicts resolved by discussions between the reviewers—estimated at Cohen’s Kappa = 0.75, indicating substantial agreement. Full-text screening was conducted by PAH and KP in *Rayyan.ai*, with conflicts resolved by discussion. The first published study in each case was selected for inclusion where a duplicate sample was identified, except where subsequent studies had a larger sample size in which case the first instance of the larger sample was selected for inclusion. Data regarding gender prevalence was taken from secondary studies when applicable ($k = 7$).

2.4. Data extraction and quality assessment

Data were extracted from all studies into an Excel spreadsheet by PAH and RK with assessment information and prevalence data from 10 % of the studies also extracted by KdB. Data extracted included key study characteristics (e.g., country where study was conducted, study

design, data collection period), sample demographics (e.g., population type, recruitment method, age, sex/gender, trauma exposure), assessment details for PTSD and CPTSD (e.g., instrument used, reliability coefficients, means, standard deviations) and prevalence rates for PTSD and CPTSD including gender-specific estimates where available. Intraclass correlation coefficient (ICC) analysis on CPTSD prevalence revealed excellent agreement between the two raters (ICC = 0.988, 95 % CI [0.97, 1.00], $p < .001$) indicating that the raters were highly consistent in their evaluations.

All eligible articles were assessed for quality using the JBI Critical Appraisal Checklist for Studies Reporting Prevalence Data (Munn et al., 2015) by PAH and RK with 10 % also independently assessed by KdB to ensure consistency. The JBI checklist assesses criteria such as sampling method and size, measurement of prevalence, data collection processes, statistical analysis, and transparency of findings. Discrepancies in quality checklist ratings between the three authors were resolved through discussion. Agreement on inclusion was unanimous (100 %) therefore a kappa statistic was not applicable. Only 25 identified samples (of 193) met the criteria for being sampled in an appropriate manner based on the JBI Critical Appraisal Checklist as they utilised random probabilistic sampling. If the study employed random probabilistic sampling and the sample was community-based, they were considered an approximately nationally representative sample.

Samples were categorised into specific subgroups: approximately nationally representative samples (derived from random probabilistic sampling), community samples (non-specific community-based samples without random probabilistic sampling), clinical samples (e.g., psychiatric inpatients), asylum seekers, refugee, and/or displaced individuals, domestic and/or sexual abuse survivors, military personnel, emergency services personnel, healthcare personnel, university students, and other specific samples.

2.5. Data synthesis

2.5.1. Effect size calculation and weighting

Effect sizes were calculated using the proportion method (PLO), which is commonly used for reporting raw prevalence rates as percentages. Missing values such as the number of participants with CPTSD diagnosis were estimated using the overall sample size and reported prevalence percentages, with final values rounded to the nearest whole number. Similarly, when odds ratios were not provided in the report, they were calculated based on the number of men and women with CPTSD separately.

The inverse variance method was used to pool the proportions across studies, and random effects were applied to account for between-study heterogeneity. The Knapp and Hartung (2003) adjustment was used to provide more accurate and conservative confidence intervals for the overall effect estimate.

2.5.2. Assessment of heterogeneity

Heterogeneity was assessed with Cochran's *Q* test, with a significant result indicating between-study variation exceeds what would be expected by chance alone. The Higgins I^2 statistic was also calculated to quantify the proportion of total variability due to between-study heterogeneity. A common interpretation for I^2 is that 25 % equates to low, 50 % to moderate, and 75 % to high heterogeneity (Borenstein, 2009). These thresholds are context-dependent and should be interpreted cautiously, particularly in prevalence meta-analyses where high heterogeneity is expected due to differences in sample characteristics, methodology, and population context.

2.5.3. Sample grouping and subgroup analyses

To facilitate meaningful comparisons, studies were grouped by sample characteristics for meta-analyses. Samples were categorised into two groups: trauma-exposed samples and potentially trauma-exposed samples. Trauma-exposed samples required at least one reported trauma exposure for inclusion in prevalence calculations, whereas potentially trauma-exposed samples did not require any trauma exposure endorsement (these people may or may not have experienced trauma). Subgroup meta-analyses were only conducted when there were three or more studies ($k \geq 3$), to ensure sufficient data for reliable estimates. Overall prevalence of combined trauma-exposed and potentially trauma-exposed samples was not interpretable and therefore not reported.

2.5.4. Gender-based analyses and estimation methods

Separate meta-analyses were conducted on gender for studies reporting CPTSD prevalence by sex or gender. Where required, prevalence cases (*n*) and rates were calculated using available data (note that considerable discrepancies were found in several studies between reported prevalence and cases counts by gender). To assess the strength and direction of the association between sex or gender and CPTSD prevalence, an additional meta-analysis was conducted on reported or calculated unadjusted odds ratios. For ease of reading, the terms 'gender', 'men', and 'women' are used throughout to reflect both gender identity and biological sex, except where original studies used 'male' and 'female' to refer to their samples, which are reported as published.

2.5.5. Publication bias

To assess potential publication bias, funnel plots were generated and Egger's regression test was conducted using Freeman-Tukey double arcsine transformed proportions (PFT; Abdulmajeed et al., 2025; Egger et al., 1997). PFT was chosen to reduce the risk of artificial asymmetry under high heterogeneity. To further evaluate and adjust for any bias, the trim-and-fill method was applied to estimate a corrected pooled effect size (Duval and Tweedie, 2000).

2.5.6. Statistical software and data availability

All statistical analyses and forest plots were conducted using R (version 4.4.2; R Core Team, 2023). Data were processed and analysed with the *meta* package (version 8.0.2; Balduzzi et al., 2019) along with the *binom* (Dorai-Raj, 2022), *dplyr* (Wickham et al., 2023), *epitools* (Aragon, 2020), *irr* (Gamer et al., 2019), *janitor* (Firke, 2024), and *readxl* (Wickham and Bryan, 2023) packages. The data for this review are available at the Open Science Framework (see https://osf.io/2hk8g/).

3. Results

3.1. Study selection

Fig. 1 outlines the PRISMA process followed to identify studies for this review. After duplicate sample removal, 167 studies were included, comprising 193 samples.

3.2. Study and sample demographics

The included studies were from a diverse range of countries, ethnicities, educational backgrounds, and socioeconomic statuses (see Table S.2 in supplementary materials for ethnicity, educational, and socioeconomic characteristics for each sample). The characteristics of the samples for the included studies can be found in Table S.3 in the supplementary materials. Table S.3 outlines the sample description, sample size, trauma assessment tool (e.g., how the index trauma was assessed to qualify for CPTSD probable diagnosis), percentage of sample endorsing at least one exposure to a potentially traumatic event, along with the prevalence for both PTSD and CPTSD for each study.

Several studies included more than one sample, and almost all studies ($k = 156$) utilised the final version of the ITQ to assess CPTSD symptoms. The only other CPTSD assessments used were the International Trauma Interview (ITI; $k = 3$) and the Child and Adolescent Trauma Screen 2 (CATS-2; $k = 1$). A total of 138,681 participants were analysed for this review. The studies included in this review were

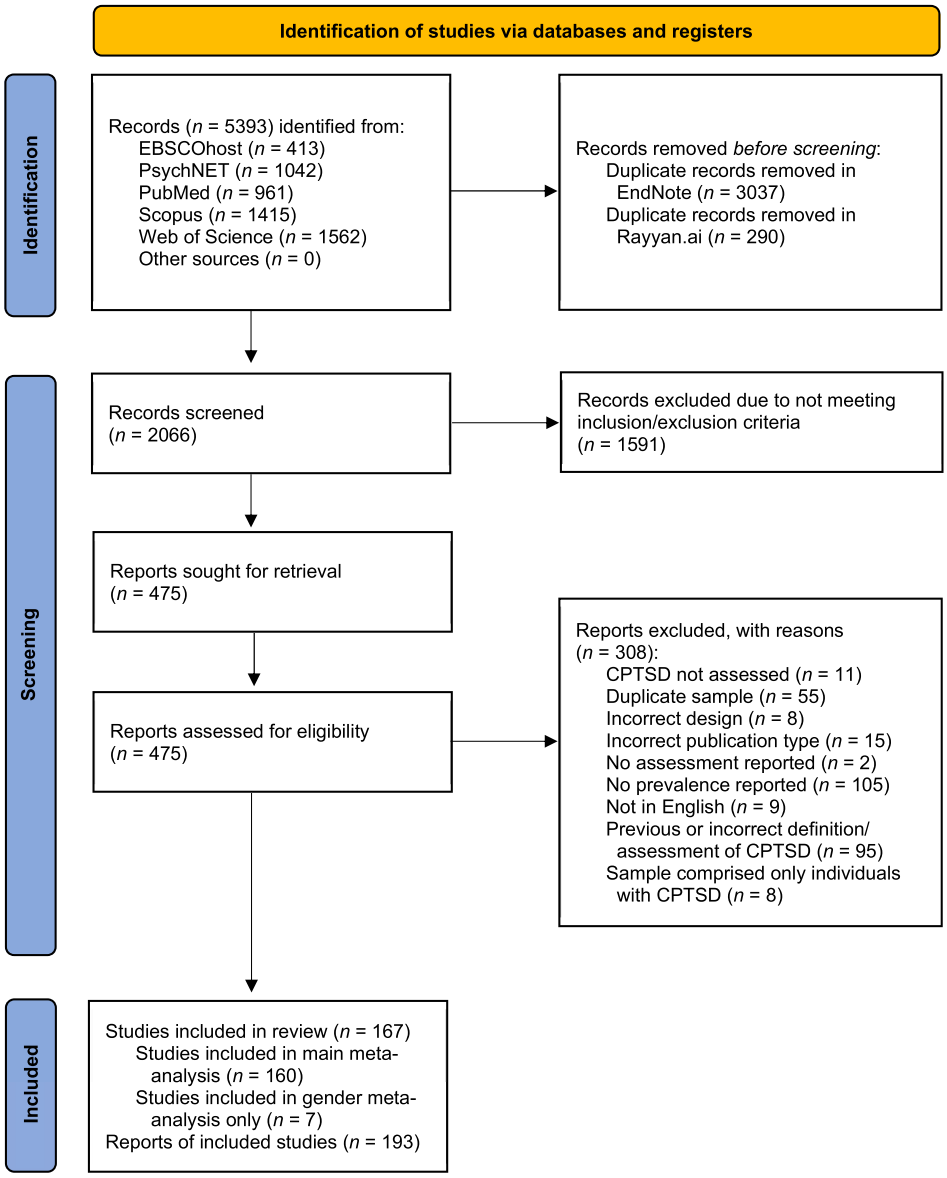

Fig. 1. PRISMA Flow Diagram.

conducted in over 60 countries, with the highest contributing countries being the United Kingdom ($k = 26$), China ($k = 14$), and Lithuania ($k = 11$). Reported average participant ages ranged from 11.7 to 72.7 years, with a mean of 35.5 years across studies. Gender representation in samples range between 100 % women ($k = 11$) and 100 % men ($k = 2$), with an average of 62.1 % women. Sample sizes ranged from 20 to 9929 participants.

3.3. Overall prevalence

A random-effects meta-analysis of 116 samples estimated the pooled prevalence of CPTSD across trauma-exposed samples, where all participants endorsed at least one potentially traumatic event. The pooled prevalence was 24.9 % (95 % CI [20.8 %, 29.6 %]; 95 % prediction interval = 2.5 %, 80.8 %), with substantial heterogeneity ($I^2 = 99.1$ %; $Q = 12{,}871.4$, $p < .001$). Subgroup analyses explored prevalence differences by sample group (see Table 1 and Fig. 2). Global pooled prevalence of trauma-exposed approximately nationally representative samples was 12.4 % (95 % CI [7.7 %, 19.3 %]). Prevalence in samples outside the main sample groups ranged from 3.3 % in older adults during COVID-19 (Greenblatt-Kimron et al., 2023) to 40.4 % in parents

Table 1
Overview of Pooled Prevalence by Sample Group for Trauma-Exposed Samples.

Sample group	*k*	Pooled prev. %	95 % CI %	I^2 %	*Q*
Approximately nationally representative	12	12.4	7.7–19.3	99.1	1194.0*
Asylum seekers, refugees, and/or displaced	15	25.4	16.0–38.0	98.9	1331.5*
Children and adolescents	4	23.9	5.5–63.1	98.3	181.2*
Clinical samples	19	44.7	36.1–53.6	96.1	465.9*
Clinical samples comprising only participants with PTSD	8	66.8	55.6–76.4	86.4	51.4*
Community	19	17.4	10.5–27.4	99.0	1952.7*
Domestic and/or sexual abuse survivors	4	40.0	30.4–50.5	87.0	23.1*
Emergency services personnel	4	7.4	2.6–19.5	98.6	210.8*
Military personnel	10	36.4	24.3–50.4	98.2	509.5*
University	7	9.9	5.6–17.1	98.0	294.6*

Note. *k* = number of samples; prev = prevalence; *Q* = Cochran's Q;.
* $p < .001$.

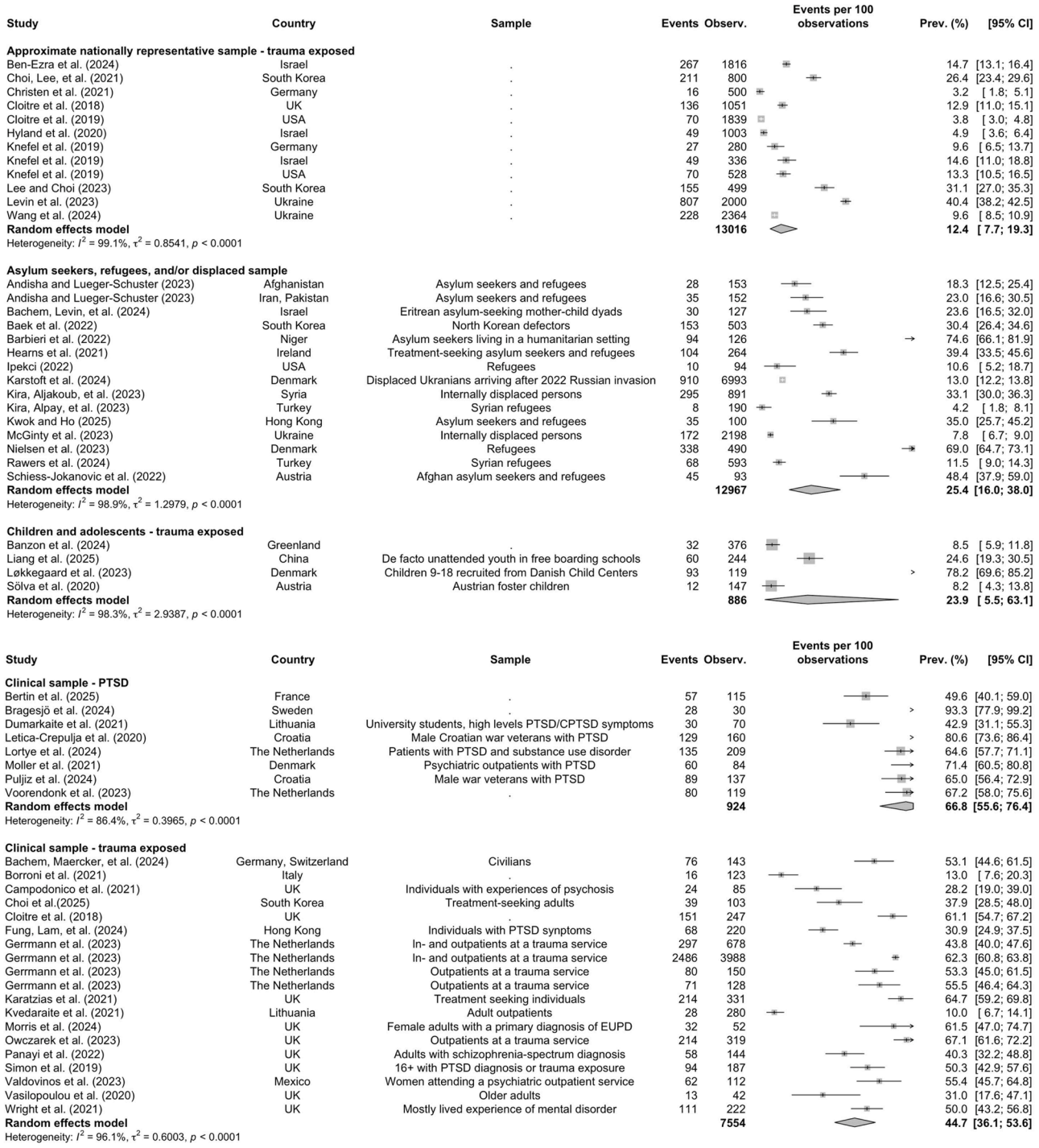

Fig. 2. Meta-Analysis for CPTSD Prevalence in Trauma-Exposed Samples.

of children and adolescents living in the Ukraine during the Russian war (Karatzias et al., 2023).

A random-effects meta-analysis of 77 samples estimated the pooled prevalence of CPTSD across potentially trauma-exposed samples (i.e., samples including participants who may or may not have endorsed exposure to potentially traumatic events). The pooled prevalence was 8.6 % (95 % CI [6.9 %, 10.7 %]; 95 % prediction interval = 1.2 %, 43.0 %), with substantial heterogeneity (I^2 = 97.6 %; Q = 3166.7, p < .001). Subgroup analyses explored differences by sample group (see Table 2 and Fig. 3). Global pooled prevalence of approximately nationally representative samples was 6.2 % (95 % CI [3.7 %, 10.3 %]). Prevalence in samples outside the main sample groups ranged from 1.9 % in front-line rail workers (Carnall et al., 2022) to 33.9 % in homeless adults living in Ireland (McQuillan et al., 2022).

3.4. Gender prevalence

Sample characteristics for studies reporting CPTSD prevalence by sex or gender prevalence are outlined in Table S.4 in the supplementary materials (e.g., sample size, gender prevalence). This review analysed 37 samples, totalling 53,269 participants, all using the finalised ITQ to assess CPTSD. One study (Greene et al., 2023) reported prevalence for

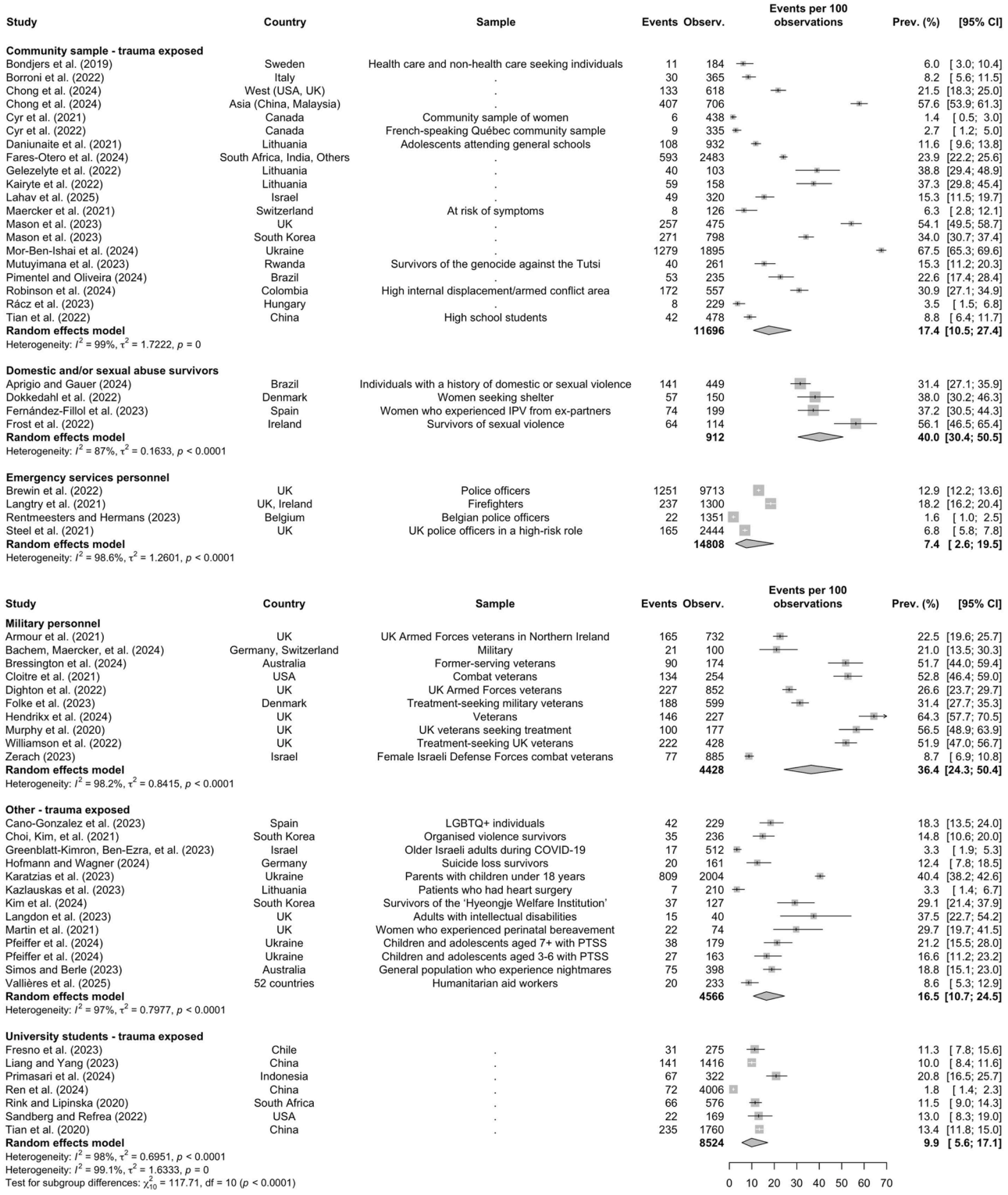

Fig. 2. (*continued*).

other genders, which was insufficient for further analysis.

A random-effects meta-analysis of 23 trauma-exposed samples reporting gender prevalence found a pooled prevalence of 14.2 % (95 % CI [9.8 %, 20.2 %]; 95 % prediction interval = 0.9 %, 76.1 %), with substantial heterogeneity ($I^2 = 98.1$ %; $Q = 2407.9$, $p < .001$). Subgroup analyses by gender revealed prevalence estimates of 13.4 % for men (95 % CI [7.7 %, 22.4 %]; $I^2 = 98.6$ %; $Q = 1530.0$, $p < .001$) and 15.0 % for women (95 % CI [8.9 %, 24.3 %], $I^2 = 97.4$ %; $Q = 834.0$, $p < .001$). This difference was not statistically significant ($\chi^2 = 0.09$, $p = .76$; see Fig. 4).

A random-effects meta-analysis of 11 potentially trauma-exposed samples reporting gender prevalence found a pooled prevalence of 9.9 % (95 % CI [6.3 %, 15.2 %]; 95 % prediction interval = 1.0 %, 55.1 %), with substantial heterogeneity ($I^2 = 96.5$ %; $Q = 594.7$, $p < .001$). Subgroup analyses by gender revealed prevalence estimates of 7.8 % for men (95 % CI [3.8 %, 15.5 %]; $I^2 = 96.5$ %; $Q = 282.1$, $p < .001$) and 12.3 % for women (95 % CI [7.0 %, 20.5 %], $I^2 = 96.7$ %; $Q = 303.7$, $p <$

Table 2
Overview of Pooled Prevalence by Sample Group for Potentially Trauma-Exposed Samples.

Sample group	*k*	Pooled prev. %	95 % CI %	I^2 %	*Q*
Approximately nationally representative	11	6.2	3.7–10.3	97.8	445.9*
Clinical	9	30.9	22.5–40.7	97.4	305.8*
Community	30	8.4	6.3–11.1	97.0	960.6*
Healthcare personnel	5	5.2	1.3–18.0	96.5	113.9*
University	12	7.0	4.5–10.9	94.0	182.6*

Note. k = number of samples; prev = prevalence; Q = Cochran's Q;.
* $p < .001$.

.001). This difference was not statistically significant ($\chi^2 = 0.99$, $p = .32$; see Fig. 5).

A random-effects meta-analysis of 37 samples examined the odds of probable CPTSD in women compared to men, with substantial heterogeneity ($I^2 = 95.1$ %; $Q = 737.0$, $p < .001$). Subgroup analyses explored heterogeneity and differences by sample category. In trauma-exposed samples the pooled odds ratio (OR) was 1.2 (95 % CI [0.9, 1.6]; $I^2 = 96.3$ %; see Fig. 6) indicating no significant gender difference. In potentially trauma-exposed samples, the pooled OR was 1.6 (95 % CI [1.1, 2.2]; $I^2 = 84.3$ %), suggesting women had significantly higher odds of probable CPTSD than men, with a moderate effect size.

3.5. Publication bias

Funnel plots using PFT indicated marked asymmetry, with most studies located on the right-hand side, indicating underrepresentation of smaller studies reporting lower rates. The significant asymmetry is further supported by the contour-enhanced funnel plot, which may impact interpretation of results (Peters et al., 2008). Egger's test was significant for both trauma-exposed ($t = 3.05$, $p = .003$) and potentially trauma-exposed samples ($t = 3.22$, $p = .002$) suggesting potential publication bias and/or small-study effects. The trim-and-fill method adjusted for this bias, resulting in corrected pooled prevalence of 13.3 % for trauma-exposed samples (95 % CI [9.4 %, 17.6 %]) and 6.0 % for potentially trauma-exposed samples (95 % CI [4.1 %, 8.1 %]). This suggests the original prevalence estimates may have been overestimated (see funnel plots before and after trim-and-fill in Figures S.1 – S.4 in supplementary materials).

Although publication bias is suggested, this is unlikely given the high heterogeneity across studies and the fact most studies did not report prevalence as a primary aim. Other factors may contribute to explaining these findings, such as small study effects, convenience sampling, and potential reporting of extreme prevalence rates due to novelty or relevance.

4. Discussion

This systematic review and meta-analysis aimed to determine the global prevalence of CPTSD, examine rates in trauma-exposed and potentially trauma-exposed groups, assess prevalence within specific populations (e.g., emergency services and military personnel), and explore differences in CPTSD prevalence by sex and/or gender from 167 studies comprising 193 samples. Global pooled prevalence of CPTSD in potentially trauma-exposed samples (from approximately nationally representative samples) was 6.2 %. In potentially trauma-exposed samples, pooled prevalence rates ranged from 5.2 % in healthcare personnel to 30.9 % in clinical samples. Pooled prevalence rates of CPTSD for trauma-exposed samples ranged from 7.4 % in emergency services personnel to 66.8 % in clinically diagnosed PTSD samples, with a global pooled prevalence of 12.4 % for approximately nationally representative samples. No significant gender differences (between women and men) were found in prevalence rates. However, women were significantly more likely to be considered to have a probable CPTSD diagnosis in potentially trauma-exposed samples, with odds 1.6 times higher for women compared to men, a moderate effect.

The substantial difference in pooled CPTSD prevalence between trauma-exposed (24.9 %) and potentially trauma-exposed (8.6 %) samples underscores the importance of distinguishing these groups. Prevalence in potentially trauma-exposed samples was relatively consistent (5.2 %−8.4 % excluding clinical samples), while trauma-exposed samples showed broader and higher variability (7.4 %−44.7 %; 66.8 % in clinical PTSD samples). These patterns further support the analytical distinction. However, the variability in actual trauma exposure within potentially trauma-exposed samples may confound comparisons. As potentially trauma-exposed samples are more representative of the general population, they may offer more accurate estimates of population-level burden and better inform public-health planning.

The prevalence rates ranging from 4.2 % to 74.6 % for asylum seekers, refugees, and/or displaced samples in the current study are consistent with previous reviews (de Silva et al., 2021; Mellor et al., 2021). However, the large variability in prevalence across these populations could be explained by population-level differences. For example, a prevalence of 74.6 % was found in a sample of asylum seekers living in a humanitarian setting (Barbieri et al., 2022), and a prevalence of 69.0 % was observed among treatment seeking refugees in Denmark (Nielsen et al., 2023). Further examination of potential differences across populations and studies such as these would be beneficial. Similarly, the prevalence rates ranging from 8.7 % to 64.3 % for military personnel align with a previous systematic review (Grinsill et al., 2024), with the current review including new studies published since the Grinsill et al. (2024) review was conducted (e.g., Bachem et al., 2024; Bressington et al., 2024; Hendrikx et al., 2024). Notably, the current review employed more strict criteria for diagnosis of CPTSD—for example, using only the latest ICD-11 definition criteria—and extended previous review findings by employing a meta-analysis on the reported prevalence rates.

The current findings indicate a comparatively lower CPTSD prevalence among emergency services personnel compared to other high-risk occupational groups. This lower prevalence may reflect the availability of supports provided or selection processes inherent to emergency services roles, which may reduce the risk of CPTSD in these populations. For example, emergency services organisations often provide regular debriefing, organisational support, and access to psychological resources which has been demonstrated to buffer the impact of traumatic exposure (Farr-Wharton et al., 2023). Contrasted with the higher CPTSD prevalence rates observed in military samples, the nature of the trauma exposure should not be overlooked. Experiences such as moral injury, direct threats to life, and lack of control in combat settings highlight the potential for severe and extreme traumatic exposure to contribute to CPTSD symptomology. Higher prevalence in military populations may also reflect limited organisational support, access to available supports, and cultural factors such as stigma and stoicism (Forbes et al., 2019; Randles and Finnegan, 2022). Adapting support strategies from emergency services—such as proactive mental health frameworks—for use in military and other high-risk contexts may help reduce both stigma and CPTSD prevalence.

Survivors of domestic and/or sexual abuse may similarly experience a threat to life and a loss of control–though in a different context to combat settings. The high prevalence observed in domestic and/or sexual abuse survivors (40.0 %) in this review may reflect the interpersonal nature of such trauma, which can erode trust, disrupt relationships, and shatter one's sense of self (Karatzias et al., 2019). These features align with the disturbances in self-organisation observed in CPTSD. Additional dynamics such as power imbalances, stigma, and shame may further complicate disclosure and help-seeking (Dutton and Goodman, 2005).

High rates of CPTSD in clinical samples highlight the pervasive

Study	Country	Sample	Events	Observ.	Prev. (%) [95% CI]
Approximate nationally representative sample					
Ben-Ezra et al. (2020)	Nigeria	.	197	1006	19.6 [17.2; 22.2]
Ben-Ezra et al. (2020)	Kenya	.	139	1018	13.7 [11.6; 15.9]
Ben-Ezra et al. (2020)	Ghana	.	65	500	13.0 [10.2; 16.3]
Ho et al. (2024)	Hong Kong	.	45	1070	4.2 [3.1; 5.6]
Hoeboer et al. (2025)	The Netherlands	.	27	1690	1.6 [1.1; 2.3]
Hyland et al. (2022)	Ireland	.	97	1100	8.8 [7.2; 10.7]
Hyland et al. (2024)	Ukraine	.	188	2050	9.2 [8.0; 10.5]
Jørgensen et al. (2024)	Denmark	.	9	470	1.9 [0.9; 3.6]
Kampling et al. (2022)	Germany	.	51	2004	2.5 [1.9; 3.3]
Redican et al. (2022)	Ireland	.	44	1293	3.4 [2.5; 4.5]
Rzeszutek et al. (2024)	Poland	.	391	3557	11.0 [10.0; 12.1]
Random effects model				**15758**	**6.2 [3.7; 10.3]**
Heterogeneity: I^2 = 97.8%, τ^2 = 0.8304, p < 0.0001					
Clinical sample					
Békés et al. (2023)	Hungary	Psychiatric inpatients	65	240	27.1 [21.6; 33.2]
Carbone et al. (2023)	Italy	Individuals with panic disorder	76	211	36.0 [29.5; 42.9]
Day et al. (2024)	Australia, New Zealand	Patients with eating disorders	60	211	28.4 [22.5; 35.0]
Fung et al. (2022)	18 countries/regions	Individuals with clinical depressive symptoms	234	410	57.1 [52.1; 61.9]
Lewis et al. (2022)	UK	Lived experience of a psychiatric disorder	166	1305	12.7 [11.0; 14.7]
Liu et al. (2024)	China	Adolescents with major depressive disorder	37	109	33.9 [25.1; 43.6]
Moller et al. (2020)	Denmark	Psychiatric outpatients	60	165	36.4 [29.0; 44.2]
Sanal-Hayes et al. (2023)	UK	Individuals with long COVID	7	21	33.3 [14.6; 57.0]
Sanal-Hayes et al. (2023)	UK	Individuals with ME/CFS	4	20	20.0 [5.7; 43.7]
Random effects model				**2692**	**30.9 [22.5; 40.7]**
Heterogeneity: I^2 = 97.4%, τ^2 = 0.3764, p < 0.0001					
Community sample					
Al Huwailah et al. (2023)	Kuwait	.	31	490	6.3 [4.3; 8.9]
Brunnet et al. (2024)	GPS-Brazil	.	31	431	7.2 [4.9; 10.1]
Chiu et al. (2023)	Taiwan	.	6	119	5.0 [1.9; 10.7]
Dighton et al. (2022)	UK	Non-veteran matched group	58	1148	5.1 [3.9; 6.5]
Eberle and Maercker (2023)	Switzerland	.	42	447	9.4 [6.9; 12.5]
Frewen et al. (2023)	Canada	.	341	1235	27.6 [25.1; 30.2]
Fung et al. (2023)	China	Recently received Traditional Chinese Medicine	69	376	18.4 [14.6; 22.6]
Greenblatt-Kimron, Karatzias, et al. (2023)	Israel	.	18	603	3.0 [1.8; 4.7]
Hujing and Yalch (2024)	USA	.	116	364	31.9 [27.1; 36.9]
Kalaitzaki et al. (2024)	Ukraine	.	86	686	12.5 [10.2; 15.2]
Kalaitzaki et al. (2024)	Romania	.	98	845	11.6 [9.5; 14.0]
Kalaitzaki et al. (2024)	Poland	.	47	235	20.0 [15.1; 25.7]
Kalaitzaki et al. (2024)	Greece	.	29	391	7.4 [5.0; 10.5]
Kalaitzaki et al. (2024)	Italy	.	74	725	10.2 [8.1; 12.6]
Kalaitzaki et al. (2024)	Kazakhstan	.	10	159	6.3 [3.1; 11.3]
Kalaitzaki et al. (2024)	Oman	.	53	437	12.1 [9.2; 15.6]
Kalaitzaki et al. (2024)	Taiwan	.	32	299	10.7 [7.4; 14.8]
Kalaitzaki et al. (2024)	Ecuador	.	68	522	13.0 [10.3; 16.2]
Kalaitzaki et al. (2024)	Peru	.	40	787	5.1 [3.7; 6.9]
Kalaitzaki et al. (2024)	Chile	.	32	474	6.8 [4.7; 9.4]
Kazlauskas et al. (2022)	Japan	Adolescents aged 12-18	37	914	4.0 [2.9; 5.5]
Kvedaraite et al. (2022)	Lithuania	.	16	885	1.8 [1.0; 2.9]
Lam et al. (2023)	China	.	66	230	28.7 [22.9; 35.0]
Maercker et al. (2021)	Switzerland	Control group	4	125	3.2 [0.9; 8.0]
Mahat-Shamir et al. (2019)	NR	.	37	343	10.8 [7.7; 14.6]
Rossi et al. (2023)	Italy	Adolescents and young adults in last year of high school	41	1010	4.1 [2.9; 5.5]
Sakuma et al. (2024)	Japan	Individuals with Irritable Bowel Syndrome	116	669	17.3 [14.5; 20.4]
Sakuma et al. (2024)	Japan	Healthy controls	39	659	5.9 [4.2; 8.0]
Sanal-Hayes et al. (2023)	UK	Healthy controls	0	20	0.0 [0.0; 16.8]
Xu et al. (2023)	China	Young adults aged 17-28 years	22	1484	1.5 [0.9; 2.2]
Random effects model				**17112**	**8.4 [6.3; 11.1]**
Heterogeneity: I^2 = 97%, τ^2 = 0.7050, p < 0.0001					
Healthcare workers					
Gonzalez-Mesa et al. (2021)	Spain	Obstetricians and gynecologists	28	220	12.7 [8.6; 17.9]
Greene et al. (2023)	UK	Frontline health, social care workers, COVID-19 first wave	150	1056	14.2 [12.2; 16.5]
Jovarauskaite et al. (2022)	Lithuania	Licensed nurses	21	206	10.2 [6.4; 15.2]
Li et al. (2022)	China	Healthcare medical workers	7	2059	0.3 [0.1; 0.7]
Zerach and Levi-Belz (2022)	Israel	Frontline health, social care workers during COVID-19	13	296	4.4 [2.4; 7.4]
Random effects model				**3837**	**5.2 [1.3; 18.0]**
Heterogeneity: I^2 = 96.5%, τ^2 = 2.4532, p < 0.0001					
Other					
Carnall et al. (2022)	UK	Front-line railway industry workers	76	3912	1.9 [1.5; 2.4]
Facer-Irwin et al. (2022)	UK	Sentenced male prisoners	37	221	16.7 [12.1; 22.3]
Fung, Lee, et al. (2024)	Taiwan	Mothers of children and adolescents	99	817	12.1 [10.0; 14.6]
Gilbar (2020)	Israel	Jewish male perpetrators receiving treatment for IPV	8	234	3.4 [1.5; 6.6]
Jannini et al. (2024)	Italy	Students in final year of high school	41	1010	4.1 [2.9; 5.5]
McQuillan et al. (2022)	Ireland	Homeless adults	19	56	33.9 [21.8; 47.8]
Sigurðardóttir et al. (2024)	Denmark	Adolescents	16	223	7.2 [4.2; 11.4]
Thoma et al. (2025)	Switzerland	Older adults	36	1526	2.4 [1.7; 3.3]
Toyoda et al. (2024)	Japan	Adults, extracurricular sports at high school	41	651	6.3 [4.6; 8.4]
Zerach (2023)	Israel	Female Israeli Defense Forces non-combat veterans	36	728	4.9 [3.5; 6.8]
Random effects model				**9378**	**6.5 [3.6; 11.4]**
Heterogeneity: I^2 = 96.9%, τ^2 = 0.9501, p < 0.0001					
University students					
Hargreaves et al. (2022)	Ireland	.	43	263	16.3 [12.1; 21.4]
Ho et al. (2020)	Hong Kong	.	26	428	6.1 [4.0; 8.8]
Ho et al. (2020)	China	.	3	340	0.9 [0.2; 2.6]
Ho et al. (2020)	Taiwan	.	11	254	4.3 [2.2; 7.6]
Ho et al. (2020)	Japan	.	9	324	2.8 [1.3; 5.2]
Kira and Shuwiekh (2022)	Egypt	Students and their families	39	228	17.1 [12.5; 22.6]
Li and Liang (2023)	China	.	21	475	4.4 [2.8; 6.7]
Lin et al. (2025)	China	.	330	2740	12.0 [10.8; 13.3]
Lotzin et al. (2023)	Ukraine	University students in an active war zone	63	563	11.2 [8.7; 14.1]
Truskauskaite et al. (2023)	Lithuania	.	55	1626	3.4 [2.6; 4.4]
Truskauskaite et al. (2024)	Lithuania	.	86	791	10.9 [8.8; 13.3]
Truskauskaite et al. (2024)	Japan	.	167	1345	12.4 [10.7; 14.3]
Random effects model				**9377**	**7.0 [4.5; 10.9]**
Heterogeneity: I^2 = 94%, τ^2 = 0.6525, p < 0.0001					
Heterogeneity: I^2 = 97.6%, τ^2 = 1.0774, p = 0					
Test for subgroup differences: χ^2_5 = 50.85, df = 5 (p < 0.0001)					

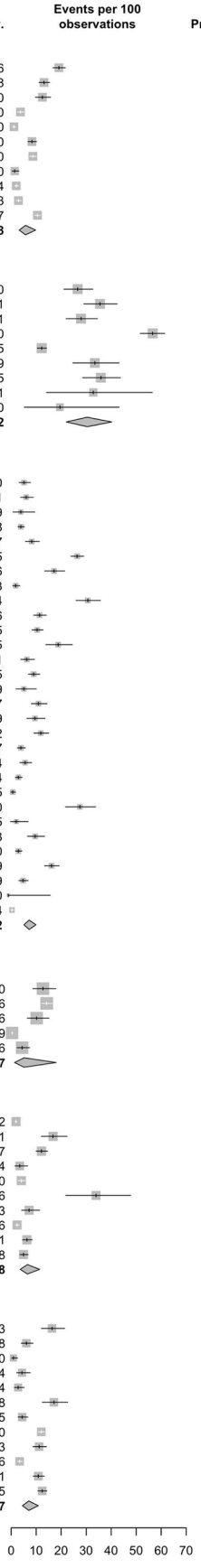

Fig. 3. Meta-Analysis for CPTSD Prevalence in Potentially Trauma-Exposed Samples.

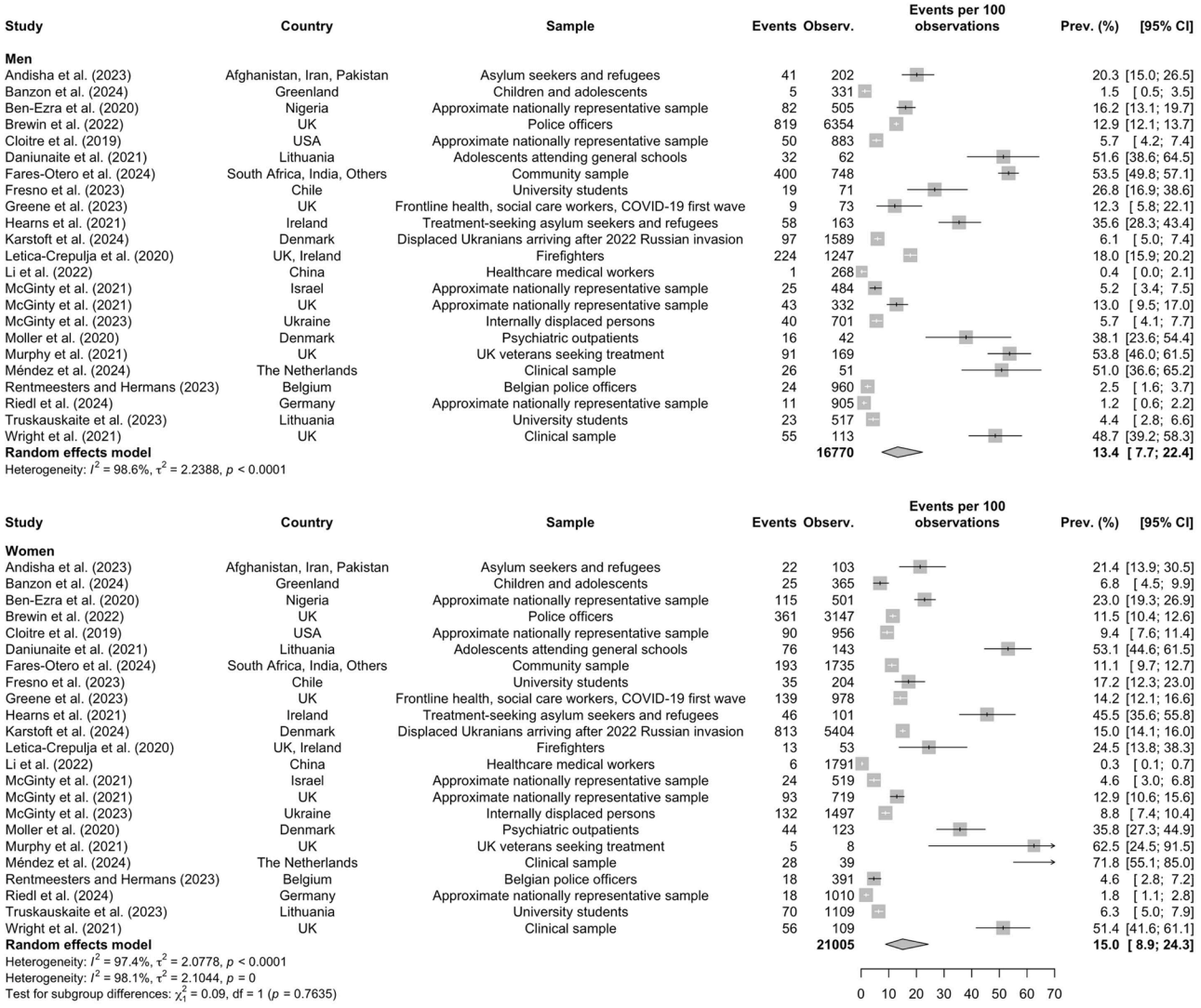

Fig. 4. CPTSD Prevalence in Women and Men in Trauma-Exposed Samples.

impact of trauma and the potential for prolonged adjustment difficulties, underscoring the need for targeted treatment approaches that address both CPTSD and its common comorbidities (e.g., mood and anxiety disorders). Notably, current results demonstrate that an estimated 66.8 % of individuals previously diagnosed with PTSD meet probable criteria for CPTSD, indicating that CPTSD is considerably more prevalent than PTSD alone. While CPTSD is recognised as a distinct disorder from PTSD in the ICD-11, this overlap raises important questions about the clinical and conceptual boundaries between the two disorders. Specifically, findings suggest CPTSD represents a more complex response to prolonged or repeated trauma with additional symptom burden, rather than simply being a more severe form of PTSD. This finding further suggests that most cases of clinical PTSD may involve more complex symptomology than is accounted for in traditional PTSD frameworks. This high prevalence of CPTSD in PTSD samples also emphasises the need to re-evaluate diagnostic and treatment approaches to ensure they adequately address the disturbances in self-organisation that are central to CPTSD, rather than focusing solely on PTSD or other co-morbid symptoms. Additionally, rates in children and adolescents were found to be higher than the general community in the current review (23.9 % vs 17.4 %), indicating a need to understand CPTSD presentation in youth more specifically.

The current gender meta-analysis found similar CPTSD prevalence estimates between men and women across both trauma-exposed and potentially trauma-exposed samples, consistent with, but expanding, existing literature (see systematic review by Lonnen and Paskell, 2024). However, in potentially trauma-exposed samples, women are 1.6 times more likely to be diagnosed with CPTSD than men. One possible explanation for this increased relative risk is the higher proportion of women in the potentially trauma-exposed samples compared to the more gender-balanced trauma-exposed samples. Additionally, the significantly higher odds among women may reflect gender differences in trauma type, cumulative adversity, reporting of trauma exposure, or broader psychosocial risk factors.

The current review's gender-based findings align with research by Hoeboer et al. (2025) who reported similar overall exposure rates between genders but noted key differences in trauma exposure type. In a nationally representative sample from The Netherlands ($N = 1648$), men were more likely to experience non-interpersonal trauma (42.3 % vs 37.5 % in women) and physical violence (19.7 % vs 12.7 % in women), whereas women were more likely to experience sexual violence (22.8 % vs 4.4 % in men). It may be that women are more often exposed to interpersonal trauma, while men may encounter more situations involving trauma exposure overall (Hujing and Yalch, 2024). If so, differences in exposure might explain the absence of significant gender differences in CPTSD prevalence. Future research could examine gender differences in trauma type and coping mechanisms following prolonged or repeated trauma exposure.

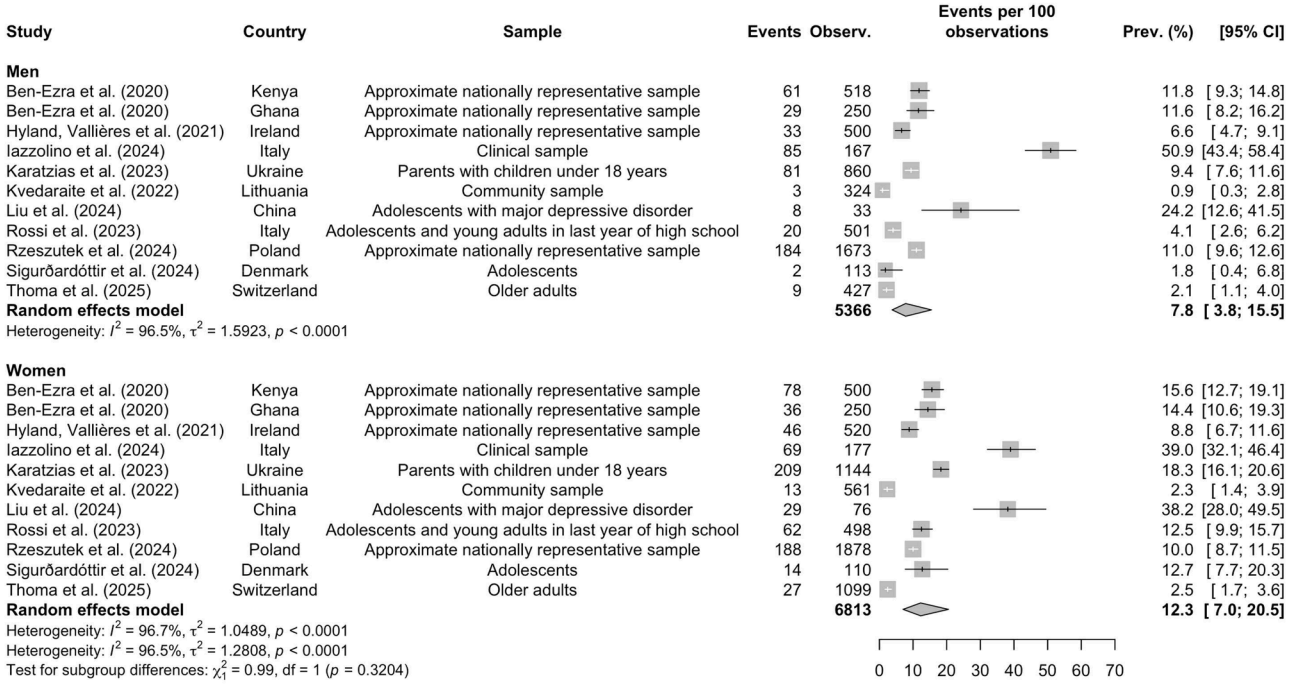

Fig. 5. CPTSD Prevalence in Women and Men in Potentially Trauma-Exposed Samples.

Most studies in this review primarily sampled women (average 62.1 %), with few focused on predominantly male or approximately nationally representative samples. Although prevalence estimates were similar, men seek help less frequently than women (Magaard et al., 2017), and their underrepresentation may contribute to lower diagnostic visibility of CPTSD in men. These findings highlight the need to explore gender differences in symptom presentation and potential diagnostic biases in clinical settings. Furthermore, few studies reported prevalence by gender. Future research should consistently report gender-specific prevalence and prioritise nationally representative studies to improve representation and confidence in comparisons.

4.1. Strengths and limitations

To our knowledge, this is the first meta-analysis to examine CPTSD prevalence across a broad range of populations, including both global and specific trauma-exposed groups, while also assessing gender differences. Strengths of this review include the use of inclusion criteria based on the most recent CPTSD definition, adherence to PRISMA guidelines, and the volume of data analysed. This comprehensive approach provides a clearer understanding of the global burden of CPTSD and highlights key gaps in the literature.

Despite the considerable strengths, this review is not without limitations. First, the ITQ indicates probable, not definite, prevalence. Moreover 97.5 % of the included studies utilised the ITQ which is a self-report questionnaire. As such, prevalence estimates may be inflated compared to those derived from structured clinical interviews such as the ITI. As only three out of 160 studies included in this review utilised the ITI, comparisons were not possible, which should be addressed in future research. Furthermore, the basis for diagnosing CPTSD differed widely within studies, for example, using DSM-IV or DSM-5/DSM-5-TR Criterion A, ICD-11 criteria, or childhood adversity as traumatic event exposure, which potentially impacts overall CPTSD prevalence estimates. For example, Hyland et al. (2021) found 7.7 % prevalence using DSM-5 criterion A and 8.1 % using the ICD-11 expanded trauma definition in the same sample. Future research could either consistently apply ICD-11 trauma criteria or report both ICD-11 and study-specific criteria to allow clearer prevalence comparisons.

Research on gender-diverse populations was scarce, and reporting of gender diversity within samples was often absent or unclear, failing to distinguish between non-responses to gender questions and non-binary identities. Future research is needed to explore CPTSD presentations in gender-diverse groups, particularly considering minority stressors experienced by these populations, to enhance diagnostic accuracy and therapeutic outcomes. This research is especially important given emerging evidence of a higher incidence of childhood trauma among transgender individuals (Arena et al., 2025).

There was marked heterogeneity across samples which, in some cases, points to population level differences and not sample level differences. However, due to the limited numbers of studies in subgroups (e.g., $k = 4$ for children and adolescents), moderator analyses, such as age in meta-regressions, were not viable. Sample categorisation was also subjective, and alternative approaches to grouping the data may have yielded different estimates. Additionally, some samples were represented in multiple categories (e.g., military personnel in clinical settings). While the international and culturally diverse nature of the samples is a strength of this review, future research could build on these findings by, for example, exploring alternative subgroupings and systematically analysing racial and ethnic differences in CPTSD prevalence.

The large volume and variability of data in this review underscores the need for standardised data collection in mental health research. Inconsistent reporting–particularly of sociodemographics and comorbidities–limits robust subgroup and moderation analyses. The Harmonized Demographics Questionnaire (HDQ; Lotfaliany et al., 2024), developed for randomised controlled trials and adaptable to cross-sectional research, could improve consistency and comparability if more widely adopted.

4.2. Conclusion

This systematic review and meta-analysis found global pooled CPTSD prevalence of 6.2 % in potentially trauma-exposed populations. Rates were highest among domestic violence/sexual abuse survivors, military personnel, and clinical samples, and lowest in emergency services personnel, healthcare personnel, and representative samples. No gender differences were observed in pooled prevalence, however,

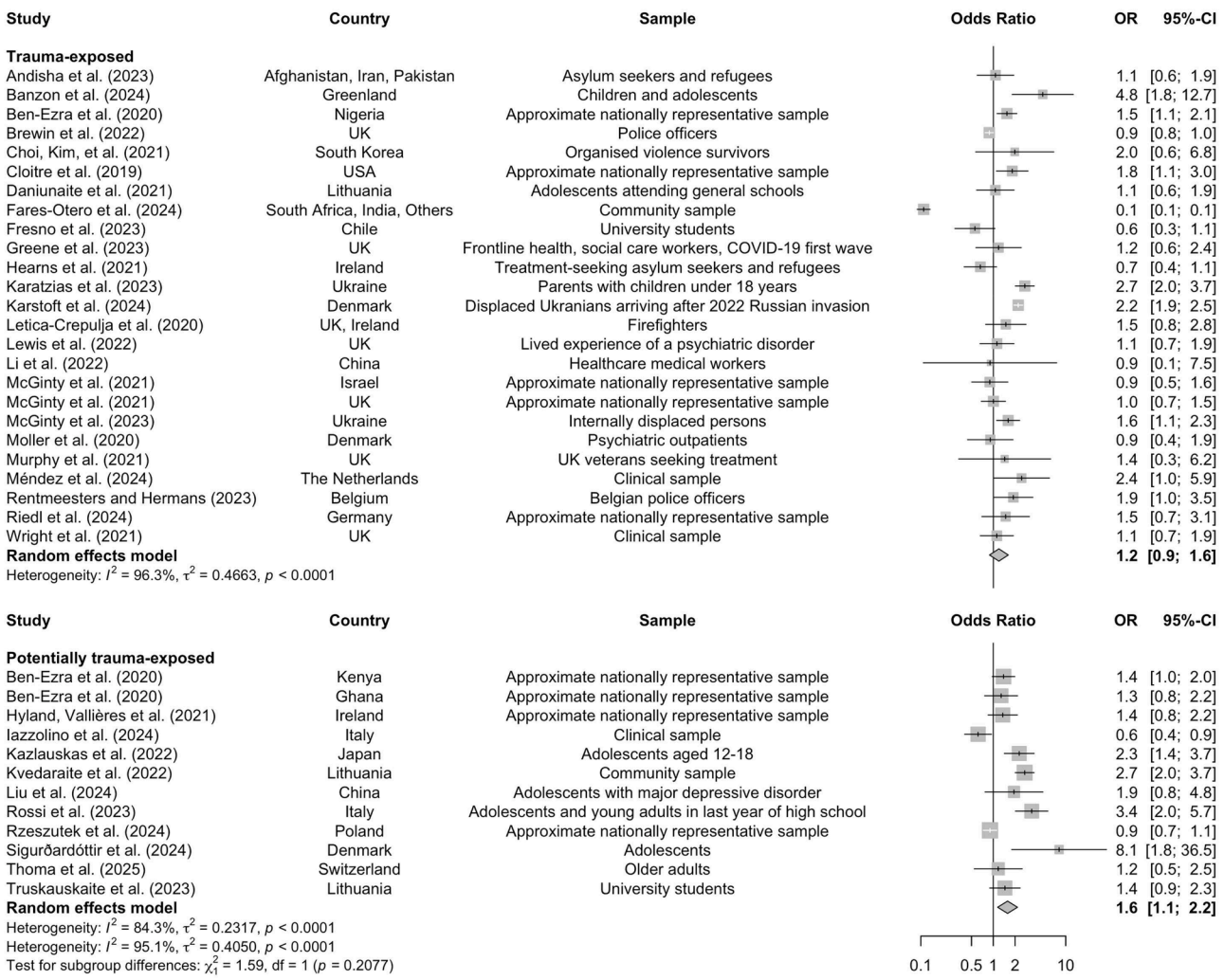

Fig. 6. Odds Ratio Difference Between CPTSD Prevalence in Women vs Men.

women had higher odds of CPTSD diagnosis in potentially trauma-exposed, but not trauma-exposed, samples. Future research could focus on consistently assessing index traumas when diagnosing probable CPTSD, report gender prevalence, and collect demographic data using standardised questionnaires. Proactive supports provided to emergency services personnel may reduce CPTSD risk and could be applied in other contexts. Interventions should also ensure CPTSD is identified and treated where indicated, particularly in men, who may be underrepresented in CPTSD research.

Declaration of generative AI and AI-Assisted technologies in the writing process

During the preparation of this work the first author used ChatGPT to improve the readability and language. After using this tool, the first author reviewed and edited the content as needed and takes full responsibility for the content of the published article.

CRediT authorship contribution statement

Phillipa Ann Huynh: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Reuben Kindred:** Writing – review & editing, Validation, Methodology, Investigation, Formal analysis. **Kirsten Perrins:** Writing – review & editing, Investigation. **Kathleen de Boer:** Writing – review & editing, Validation, Investigation. **Stephanie Miles:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Glen Bates:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Maja Nedeljkovic:** Writing – review & editing, Methodology, Conceptualization.

Declaration of competing interest

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.psychres.2025.116586.

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