The short-, mid-, and long-term efficacy of psychological interventions for adult PTSD following exposure to single vs. multiple traumatic events: A meta-analysis of randomised controlled trials

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Abstract

Background:

Previous meta-analyses of psychological interventions for adult PTSD did not investigate whether efficacy is diminished in individuals with PTSD related to multiple (vs. single) traumatic events. The present work aimed to close this gap.

Methods:

A pre-registered meta-analysis (CRD42023407754) was conducted. PsycINFO, MEDLINE, Web of Science, and PTSDpubs were searched from inception to April 18 2023. Randomised controlled trials (RCTs) involving adult clinical samples (≥70% meeting full PTSD criteria) with adequate size (N≥20) were included. We extracted data on trial characteristics, demographics, and outcome data. Random effects meta-analyses were run to summarize standardized mean differences (Hedges' *g*). Trials involving 0% vs. ≥50% participants with multiple-event-related PTSD (i.e., tied to ≥2 traumatic events) were categorized as single vs. multiple trauma trials, respectively. Quality of evidence was assessed using the Cochrane criteria.

Findings:

Overall, 137 RCTs ($N_{baseline}$=10 692, $N_{posttreatment\ data}$=9477) were included in quantitative synthesis. Of those randomised, 5772 participants identified as female (54%), 4917 as male (46%), and 3 as transgender or other (0%). Thirty-four trials (25%) exclusively involved women, 15 trials exclusively men (11%) and the remaining mixed samples. Mean age across trials was 40·2 (SD=9·0) ranging from 18·0 to 65·4. Approximately a fifth of the accumulated evidence involved non-Western samples (k=23, 17%). Data on ethnicity were not extracted. At treatment endpoint, psychological interventions were highly effective for PTSD when compared to passive control conditions in both samples with single-event-related PTSD (Hedges' *g* 0·92 [95% CI 0·60–1·25]; *k*=11; I^2=62%) and multiple-event-related PTSD (Hedges' *g* 1·13 [95% CI 0·90–1·35]; *k*=55, I^2=87%), with no efficacy difference between these categories (*p*=0·48). Heterogeneity between studies was substantial and outlier-corrected analysis yielded similar results. Moderate-sized effects were found compared to active control conditions with, again, no significant difference between single and multiple trauma trials. Results were robust in various sensitivity analyses (e.g., 90% cut-off for multiple trauma trials) and analyses of follow-up data. The quality of evidence was moderate to high.

Interpretation:

Contrary to our hypothesis, we found strong evidence that psychological interventions are highly effective treatments for PTSD in patients with a history of multiple traumatic events. Results are encouraging for clinical practice and may counteract common misconceptions regarding treatment and treatment-barriers.

Funding: None.

Panel: Research in context

Evidence before this study

During the past four decades, a large number of randomised controlled trials on psychological treatments for adult PTSD have accumulated. Large and moderate short-, mid-, and long-term efficacy of psychological interventions as compared to passive and active control conditions, respectively, has been reported in numerous quantitative reviews. However, efficacy of interventions may differ for individuals with single- vs. multiple-event-related PTSD. We systematically reviewed the literature on the efficacy of psychological interventions. To this end, we searched PsycINFO, MEDLINE, Web of Science and PTSDpubs until April 18 2023 for reviews related to adult PTSD treatment. We used search terms for PTSD (e.g., "post-traumatic stress", "post-traumatic syndrome", "PTSD" or "PTSS") and treatment (e.g., "treatment", "intervention", "therapy", "psychotherapy", "exposure", "trial" or "counselling") in all-field searches. No language restrictions or other restrictions were applied. A total of 185 review articles targeted psychological interventions for adult PTSD. Yet, none of them had investigated the extent to which psychological treatments are less/equally/more effective in alleviating single- vs. multiple-event-related PTSD.

Added value of this study

The present meta-analysis reports strong evidence for the notion that psychological interventions are highly effective in treating not just patients with PTSD tied to a single trauma but also patients with PTSD tied to multiple traumas. In none of our (pre-registered) analyses, did we find a significant difference in efficacy between single vs. multiple trauma trials. Large treatment efficacy relative to passive control conditions and small to moderate treatment efficacy relative to active control conditions was observed for both single and multiple trauma trials. Notably, trauma-focused CBT was found to be more effective than non-trauma-focused psychological interventions in samples with multiple-event-related PTSD.

Implications of all the available evidence

The present work has implications for the informed consent procedure, the provision of psychological treatments for adults with PTSD, therapist training, and future research. The large effects observed for single- as well as multiple-event-related PTSD trials is very encouraging for clinical practice. The present work indicates that widespread claims regarding limited efficacy and/or suitability of trauma-focused interventions for patients with multiple-event-related PTSD are counter to the evidence. The results of the present work have implications for therapist training for PTSD treatment and may help in decreasing treatment barriers concerning the treatment of patients with more complex trauma histories. Teaching therapists about the present results may facilitate evidence-based informed consent procedures in clinical practice and help patients to overcome intrinsic treatment barriers. Future research needs to provide more long-term efficacy data and report results from intent-to-treat (rather than completer) analyses. Results strengthen the recommendations in international treatment guidelines, which list trauma-focused psychological interventions (trauma-focused CBT and EMDR) as first-line treatment recommendations.

Introduction

About four percent of individuals worldwide have posttraumatic stress disorder (PTSD),[1] a condition characterized by intrusive traumatic memories, avoidance, negative alterations in cognitions and mood, and increased arousal.[2] Exposure to multiple (vs. single) traumatic events is associated with higher prevalence and severity of PTSD as well as more emotion regulation difficulties, interpersonal problems, and overall functional impairment.[3,4] The question arises as to whether individuals being treated for PTSD tied to exposure to multiple traumatic events (i.e., two or more traumatic events) benefit less from psychological treatments than individuals with PTSD tied to exposure to a single traumatic event. Furthermore, many therapists are reluctant to use trauma-focused treatments if patients have been exposed to multiple traumas.[5] Previous meta-analyses of randomised controlled trials (RCTs) indicate that psychotherapies for PTSD produce large and medium effect sizes when compared to passive and active control conditions, respectively.[6] However, no meta-analysis has investigated whether the efficacy of psychological PTSD treatments varies by trauma frequency. We conducted a meta-analysis to address this gap. Potential variations in efficacy would require adjustments to current treatments. We expected that treatment efficacy would be lower in RCTs involving multiple-event-related (vs. single-event-related) PTSD.

Method

Search strategy and selection criteria

We pre-registered this meta-analysis with the PROSPERO database (ID: CRD42023407754) and followed the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines[7]. We formulated our main research question via the Population, Intervention, Comparison, Outcome, and Study design (PICOS) as

follows: In adults with PTSD (P), are psychological interventions (I) in adults with multiple-event-related PTSD in comparison to adults with single-event-related PTSD (C) less effective in reducing PTSD severity at short-term (i.e., treatment endpoint), mid-term (≤5 months follow-up), and long-term (>5 months follow-up) (O) in randomised controlled trials (S)?

We applied the following inclusion criteria: 1) random allocation; 2) at least one comparison between a psychological intervention and a control condition, or amongst two psychological interventions from different families; 3) sample mean age≥18·0; 4) *N*≥20; 5) PTSD was the primary complaint and treatment target; 6) sample baseline PTSD rate of ≥70% as assessed with a diagnostic interview based on any iteration of ICD[8] or DSM[9] criteria. The decision to exclude trials that solely included participants based on self-report measures and the threshold of ≥ 70% interview-based PTSD for inclusion were chosen to ensure that PTSD was the primary presenting complaint and that the majority of the sample suffered clinical levels of PTSD. This approach has been applied in previous meta-analyses in the field.[6,10,11] In line with criterion 5), we excluded trials exclusively involving individuals (i.e., 100% of the sample) with comorbid PTSD and traumatic brain injury or comorbid PTSD and substance use disorders (SUD). Trials with comorbid SUD and PTSD were excluded given that the treatment model of this comorbidity often comprises a sequential approach where a specific form of intervention is used first to treat SUD, and then trauma-focused treatment for PTSD is only considered once abstinence is achieved.[12] Note that samples with comorbidities were generally included as long as inclusion criterion 5 was met.

We updated our previous systematic search[6] conducted on April 21st 2022 with a new systematic search on April 18th 2023 and using the same search strategy (see Appendix A for the full search strategy). In brief, we conducted multi-field searches in PsycINFO, Medline, Web of Science, and PTSDpubs using various search terms for PTSD (e.g., post-traumatic stress OR PTSD) and treatment (e.g., treatment* OR intervention*).

No language or other restrictions were applied. We further reviewed 185 review articles (see Appendix B for their references), the reference lists of all trials included in the present work and the U.S. Veteran Affairs trial registry. In case of missing data, data request mails (at least two) were sent.

Data analysis

Trials with 100% of participants with single-event-related PTSD were coded as *single trauma trials*. Notably, the term event(s) refers to number of traumatic incidents rather than number of trauma types experienced. That is, repeated exposure to the same trauma type are regarded as multiple traumatic events in the present work. Trials involving 50-100% of participants with multiple-event-related PTSD (i.e., ≥ two traumatic events) were categorized as *multiple trauma trials*. To allow for a valid investigation of the research question at hand, trials with 1-49% of the participants with multiple-event-related PTSD were not included in the quantitative analyses, nor were trials with insufficient reporting on trauma frequency, in line with previous research.[13] The 50% cut-off for the multiple trauma trials was chosen to balance out a) the number of trials per category (i.e., single vs. multiple trauma trials category) and thus statistical power of the moderator analyses and b) the internal validity of our categorizations. However, we also performed a sensitivity analysis with a more conservative definition of multiple trauma trials (i.e., ≥90% participants with multiple-event-related PTSD).[13] Trials involving soldiers and veterans from the US as well as samples who suffered chronic forms of childhood trauma were categorized as multiple trauma trials (including the conservative definition) by default given epidemiological research indicating very high levels of trauma load in these populations.[14,15]

Interventions were divided into the following four categories: 1) trauma-focused cognitive behaviour therapy (TF-CBT), 2) eye movement desensitization and reprocessing (EMDR), 3) other trauma-focused psychological interventions not

belonging to the former two, and 4) non-trauma-focused psychological interventions. The control groups were divided into passive and active control conditions (see Appendix C for a thorough overview of categorizations). In line with previous meta-analyses (including our own reviews),[6,10,11] treatment efficacy was estimated compared to passive and active control conditions, but not to a particular pharmacological treatment as this represents an entirely different class of intervention.

The main outcomes considered were the short-term (treatment endpoint), mid-term (≤5 months), and long-term efficacy (>5 months) of treatments for PTSD symptomatology relative to a given comparator. Treatment efficacy was estimated via standardized mean differences (Hedges' g) of final scores between arms (rather than change scores). Clinician-administered PTSD outcome assessments were prioritized over self-report-based ones when both were reported. The categorization of assessment timepoints into short-term (i.e., treatment endpoint), mid-term (≤5 months), and long-term (>5 months) efficacy was based on previous work on the efficacy of treatments for PTSD[6,11] as well as depression.[16]

We extracted trial characteristics (e.g., number and length of treatment sessions, statistical analysis applied), demographics (e.g., % of sample identifying as female, mean age), and trial quality characteristics to assess the risk of bias. We rated the quality of trials by means of eight dichotomous quality criteria that were originally based on Cochrane Collaboration criteria[17] and complemented by authoritative criteria for empirically supported psychological interventions.[18] These eight criteria are widely used in meta-analytic conduct to assess risk of bias of RCTs in clinical research.[19] Trials received a positive quality score when: 1) 100% of participants were diagnosed via interview with full PTSD at baseline, 2) a specifiable treatment manual was followed, 3) study therapists were formally trained to apply this manual, 4) adherence to this treatment manual was formally checked, 5) intent-to-treat (ITT) results were reported, 6) $N \geq 50$ (i.e., $n_1+n_2 \geq 50$), 7) random allocation was performed by an independent party

or computerized, and 8) PTSD as an outcome was assessed by blinded assessors or via self-report measures. See Appendix D for an overview of the eight quality criteria and Appendix E for the quality ratings per trial.

Hedges' *g* was calculated by subtracting the PTSD symptom severity mean of the intervention group from the PTSD symptom severity mean of the comparator group at a given assessment timepoint, dividing the difference by the pooled standard deviation and then multiplying the quotient by the sample size correction factor $J=1-(3/(4df-1)$.[20] We used Cohen's convention of small (0·2), medium (0·5), and large (0·8) effects for interpretation.[21]

Using the metafor package (v·3·4·0) in R version 4·1·1 for Windows,[22,23] we conducted random effects meta-analyses. Factorial meta-analyses were carried out for the dichotomous definition of trauma frequency (i.e., single vs. multiple trauma trials) and meta-regressions were carried out for the continuous definition of trauma frequency (i.e., mean number of lifetime trauma events), when sufficient evidence had accumulated ($k\geq4$ per group for the dichotomous definition of trauma frequency, $k\geq10$ for the continuous definition of trauma frequency).[24] The *Q*-statistic (including its statistical significance level) and the I^2-statistic were calculated as metrics for examining the heterogeneity in outcomes. I^2 denotes the percentage of variation in outcomes that is due to true heterogeneity rather than sampling error. We calculated both 95% confidence intervals of effect sizes as well as 95% prediction intervals (*PIs*). *PIs* supply an interval in which the true estimate is to be expected when similar future trials accumulate.[25] We also calculated the numbers needed to treat (*NNTs*) as a secondary metric. *NNTs* indicate the numbers of patients needed to be treated to achieve one additional treatment success (compared to the comparator).[26] Analyses were first conducted for interventions generally and then repeated for each family of interventions (e.g., TF-CBT only) whenever the evidence base was sufficient.

Outlier-adjusted results were run. We defined outliers as extraordinarily low or high effect sizes (i.e., at least 3.3 standard deviations below or above the pooled *g*), as recommended.[27] To check whether differences in trial quality (see risk of bias assessment above) may bias results, we analysed within the single vs. multiple trauma trials categories whether or not trial quality was associated with efficacy outcomes. As recommended,[24] we only performed the Egger's test[28] when $k \geq 10$ and corrected detected asymmetry with the trim-and-fill method.[29] Six sensitivity analyses were run: 1) analyses repeated with a more conservative definition of multiple trauma trials (≥90% instead of ≥50% of participants with multiple-event-related PTSD); 2) analyses with trauma frequency as a continuous potential moderator of efficacy (i.e., mean number of lifetime traumatic events); 3) analyses involving civilian samples only (i.e., exclusion of samples with occupation-based PTSD such as soldiers, veterans and first responders), based on recent findings that treatment efficacy for PTSD in military populations is lower than in civilian populations;[30] 4) sex/gender-specific analyses (i.e., trials involving only female vs. only male participants); 5) analyses with trials involving only non-Western participants; 6) analyses with only high quality trials (i.e., quality sum score ≥7; threshold applied in previous research[6]).

Role of the funding source

There was no funding source for this study.

Results

Study synthesis and characteristics of included trials

See Figure 1 for an overview of the study synthesis. Our systematic search yielded 161 eligible RCTs. Of these, 137 RCTs could be quantitatively analysed. The other 24 trials (15% of all eligible trials) either did not report sufficiently on trauma history of the sample or had between 1 and 49% participants with multiple-event-related PTSD.

-Figure 1 about here-

See Appendix F for an overview of all trial characteristics including the categorization into single vs. multiple trauma trials and the mean number of lifetime traumatic events. Of the eligible RCTs, 136 RCTs (85%) reported sufficient information on sample trauma history to warrant categorization into the categories of single vs. multiple trauma trials. One trial only reported on the number of lifetime traumatic events and was, therefore, only included in the continuous moderator analysis.[31] In total, 137 RCTs ($N_{baseline}$=10 684, $N_{posttreatment\ data}$=9477) were included in quantitative synthesis. Of the participants with available outcome data, 5258 and 4219 were randomised to experimental and control conditions, respectively. All RCTs were reported (in English) in published journal articles, except one unpublished trial.[32] See Appendix G for all references of included RCTs. Of those randomised, 5772 participants identified as female (54%), 4917 as male (46%), and 3 as transgender or other (0%). Thirty-four trials (25%) exclusively involved women, 15 trials exclusively men (11%) and the remaining mixed samples. Mean age across trials was 40·2 (SD=9·0) ranging from 18·0 to 65·4. Most of the accumulated evidence involved Western (k=114, 83%) rather than non-Western samples (k=23, 17%). A few trials were conducted in Western countries but involved non-Western refugee samples and were therefore included in the latter category. Data on ethnicity were not extracted. Amongst the trials that were included in at least one quantitative analysis (k=137), approximately half of the trials (*k*=79; 58%) utilized the Clinician-Administered PTSD Scale (CAPS).[33] Approximately half of the trials (*k*=73; 47%) reported completer results. About three in four trials (*k*=99; 72%) delivered the interventions individually and face-to-face rather than other delivery formats (e.g., group, technology-based). Trials had an unweighted mean of 11 sessions (*SD*=5·4) with

an average length of 91 minutes per session (*SD*=35) and a total treatment duration of 975 minutes (*SD*=794).

Risk of bias

The initial agreement rates for the quality coding and the categorization into single vs multiple trauma trials were acceptable (92% and 81%, respectively). Disagreements were resolved amongst at least three co-authors. Study quality was moderate to high on average with an unweighted mean across trials of 5·9 (*SD*=1·5).

Short-term efficacy

See Table 1 for all results in terms of short-term treatment efficacy. At treatment endpoint, psychological interventions were highly efficacious for PTSD when compared to passive control conditions in single trauma trials (Hedges' *g* 1·04 [95% CI 0·77–1·31]; *k*=11; I^2=43%; see Figure 2 for a forest plot) and multiple trauma trials (Hedges' *g* 1·13 [95% CI 0·90–1·35]; *k*=55; I^2=87%; see Figure 3 for a forest plot), with no statistically significant difference in efficacy (*p*=0·78). Heterogeneity was non-significant in the single trauma trials category and high and significant in the multiple trauma trials category. Results remained very similar when one multiple trauma trial outlier was removed. For both trial types, the numbers needed to treat were approximately two. Study quality did not significantly predict efficacy in the single trauma trials (k=11; b=0·21; I^2=38·09, *p*=0·12) nor in the multiple trauma trials category (k=55; b=0·01; I^2=87·62; *p*=0·91).

When compared to active control conditions at treatment endpoint, interventions yielded moderate effect sizes in both single trauma (Hedges' *g*=0·78 [95% CI 0·15–1·40]; *k*=4; I^2=63·83) and multiple trauma trials (Hedges' *g*=0·44 [95% CI 0·32–0·56]; *k*=39; I^2=50·71). Efficacy did not differ significantly (*p*=0·20), and moderate heterogeneity in both categories was found. Results remained very similar when one

outlier was removed and when the trim-and-fill-method adjusted for significant asymmetry. Heterogeneity remained moderate after both adjustments. Study quality was not a significant predictor of outcomes in multiple trauma trials (k=39; b=-0·06; I^2=48·26; p=0·16). Single trauma trials were too few (k<10) to analyse the relationship between study quality and efficacy in this sub-group.

A sub-analysis focused on TF-CBT yielded very similar results (see Table 1). Other families of interventions did not have sufficient accumulated single trauma trials (k<4) to warrant moderator analyses. For multiple trauma trials, other families of interventions also produced significant effects compared to control conditions. However, TF-CBT yielded larger efficacy at treatment endpoint compared to non-trauma-focused interventions in multiple trauma trials (Hedges' g=0·13 [95% CI 0·05–0·21]; k=21; I^2=0·00). Heterogeneity in outcomes was low and non-significant. Results remained very similar when two outliers were removed. TF-CBT and EMDR did not differ significantly in terms of short-term efficacy in multiple trauma trials (Hedges' g=0·15 [95% CI -0·20–0·49]; k=5; I^2=23·19). Heterogeneity in outcomes was low and non-significant. Other comparisons between interventions were not feasible (k<4).

Mid- and long-term efficacy

At mid-term follow up, psychological interventions yielded large effect sizes when compared to passive control conditions in both single trauma trials (Hedges' g=1·26 [95% CI 0·95–1·58]; k=4; I^2=0·00) as well as multiple trauma trials (Hedges' g=0·88 [95% CI 0·47–1·29]; k=14; I^2=85·62), with no significant difference (p=0·35; see Table 2). No heterogeneity was found for single trauma trials and high and significant heterogeneity for multiple trauma trials. Psychological interventions yielded moderate effect sizes at mid-term when compared to active control conditions in multiple trauma trials (Hedges' g=0·42 [95% CI 0·24–0·60]; k=21; I^2=58·02) with moderate and significant heterogeneity in outcomes. Single trauma trials were too few (k=0) to enable

comparison. An analysis on mid-term efficacy of TF-CBT vs. passive control conditions also yielded high efficacy (Hedges' *gs*≥1·05) within both the single and the multiple trauma trials with no significant difference between these (p=0·65). Heterogeneity in outcomes was low and non-significant for the single trauma trials, and high and significant for the multiple trauma trials. Numbers needed to treat were approximately equivalent and just below two. Non-trauma-focused interventions when compared to active control conditions were not effective at mid-term in multiple trauma trials (Hedges' g=0·14 [95% CI -0·06–0·33]; k=6; I^2=0·00). Heterogeneity in outcomes was low and non-significant. At mid-term, TF-CBT was found more effective than non-trauma-focused interventions (Hedges' g=0·21 [95% CI 0·07–0·34]; k=15; I^2=48·01) with moderate and significant heterogeneity in outcomes. Otherwise, single trauma trials with mid-term data were too few to warrant analyses for other families of interventions. Almost all studies on long-term efficacy investigated TF-CBT. Single trauma trials were generally too scarce to analyse the main research question. Efficacy results for multiple trauma trials remained similar to the results at treatment endpoint and mid-term with moderate (and highly significant) effect sizes. TF-CBT remained more effective than non-trauma-focused interventions in the long-term (Hedges' g=0·13 [95% CI 0·02–0·24]; k=12) with low and non-significant heterogeneity in outcomes. Results remained similar when two outliers were removed and when one study was added by the trim-and-fill-method.

-Table 1 and Table 2 about here-

Sensitivity analyses

The sensitivity analysis with the more conservative definition of multiple trauma trial produced results similar to those of the main analysis (see Appendix H for data at posttreatment and Appendix I for data at follow-ups). Results of the sensitivity analysis

involving only civilian samples (i.e., excluding soldiers, veterans, first responders etc.) also yielded similar results (see Appendix J for short-term and Appendix K for long-term efficacy results). The only noteworthy difference concerned the mid- and long-term efficacy of TF-CBT compared to non-trauma-focused with a more pronounced superiority for TF-CBT (*gs* around 0·5) in civilian samples in multiple trauma trials (see Appendix I).

Results of the remaining sensitivity analyses were also very similar to those of the main results. All of these analyses were restricted to the multiple trauma trials category in the light of lacking single trauma trials. Effect sizes were significant in exclusively female and male samples (see Appendix L), exclusively non-Western samples (see Appendix M) and in high-quality trials (see Appendix N), and were of comparable magnitude to the main analysis. The one possible sensitivity analysis with the *continuous* definition of trauma frequency with merged active and passive controlled groups (k≥10) revealed that the mean number of lifetime traumatic events was not significantly associated with treatment outcomes (k=11; b=-0·10; I^2=85·11, p=0·44).

-Table 3 and Table 4 about here-

Discussion

This meta-analysis considered whether the efficacy of psychological interventions for PTSD in adults –established in previous meta-analyses[6] – was moderated by the status of single- vs multiple-event-related PTSD. Contrary to the hypothesis, moderator analyses yielded no significant difference in treatment efficacy for PTSD in samples with single- vs. multiple-event-related PTSD. This finding was observed in comparisons to both passive and active control conditions, and was robust to the removal of outliers, the removal of non-civilian samples, and a more conservative approach to the definition of multiple trauma trials (i.e., ≥90% of sample with multiple-event-related PTSD). The

same pattern was observed in six sensitivity analyses including one involving the continuous trauma frequency definition.

Compared to passive control conditions, the majority of the meta-analyses yielded large treatment effects for both single- and multiple-event-related PTSD, even at follow up. Effect sizes for trials with active control conditions were mostly medium in size. For TF-CBT, the most commonly studied treatment, multiple trauma trials comparing with active control conditions yielded moderate effects sizes at post-treatment, <5 month follow up and >5 month follow up (Hedges' *g*s>0·48). EMDR also demonstrated short-term treatment efficacy when compared to both active and passive control conditions for multiple trauma-exposed adults, though there was insufficient follow-up data, making it impossible to draw firm conclusions regarding the mid- and long-term efficacy of EMDR.

Comparisons between different families of interventions were limited to multiple trauma trials. TF-CBT was more effective in multiple trauma trials than non-trauma-focused interventions. This effect persisted at follow up, and was higher in civilian populations with moderate sized effects in terms of superiority. TF-CBT and EMDR did not differ significantly in terms of efficacy in any of the feasible analyses.

These findings have implications for the provision of psychotherapies for adults with PTSD. First, multiple trauma is associated with a worse PTSD presentation.[3,4] The finding that this vulnerable population nevertheless responds well to intervention is encouraging. Moreover, the findings of the present review are consistent with previous reviews suggesting that psychological therapies are efficacious for particular adult populations, e.g. childhood abuse-related PTSD[34] and veterans.[35] On the basis of this evidence there are no grounds for service providers to limit the provision of such therapies to adults with single-event-related PTSD.

Second, this review speaks to therapist training. A host of factors may act as barriers to the delivery of evidence-based interventions for PTSD, with therapist factors

such as fears around trauma exposure in treatment and lack of training being widely reported.[36]Some therapists believe that trauma-focused interventions are not appropriate for individuals who have been through multiple traumas.[37] The present findings may be used in training to highlight the large body of evidence that contradicts such misconceptions. A recent meta-analysis of RCTs[38] further illustrates that psychological treatments for adult PTSD are very safe (again, contrary to widespread misconceptions[37]), with rates of all-cause deterioration and all-cause adverse events being very low (<5% of patients).

Third, these findings may speak to our understanding of how to treat complex PTSD (CPTSD). CPTSD, a diagnosis introduced in ICD-11[8] that features the core PTSD symptoms plus additional *disturbances in self-organization* (DSO), has been conceptualized as a possible response to prolonged and repeated traumatic events. Very few treatment trials have so far directly addressed CPTSD. Previous reviews concerning CPTSD treatment have focused on studies that have included at least one additional DSO symptom at baseline (in addition to the core PTSD symptoms),[39] or have focused on the treatment of PTSD in adults who have experienced complex trauma (e.g. childhood sexual abuse, domestic violence).[40] In both reviews, trauma-focused psychological therapies were found to be efficacious.[39] While more research into CPTSD is warranted the present findings suggest that such interventions should be considered a first-line treatment for adults with CPTSD.

The present meta-analysis highlights considerations for future research. First, this review highlights the importance of trial quality. While quality was not related to the efficacy of PTSD treatment, more can be done to improve the quality of evidence in this area. Nearly half of the included trials reported results from completer analyses rather than ITT analysis. Second, there is an extreme dearth of studies conducted in low

and middle-income countries. Third, there is a need for trials with follow up assessments, especially long-term follow up assessments.

This review was strengthened by being pre-registered, its separate consideration of active and passive control condition trials, an examination of the effect of study quality, comprehensive attention to follow up assessments, the use of two approaches to study classification (i.e., ≥50% as well as ≥90% of participants with multiple-event-related PTSD), and the use of both dichotomous and continuous indices of trauma frequency.

Limitations of the present review also need to be noted. First, the lack of studies that reported mean number of traumas experienced meant that active and passive control condition trials had to be pooled for the continuous moderation analysis. Trialists are strongly encouraged to report in detail on trauma history in future trials. Second, it would have been desirable to also focus on other metrics of treatment success beyond standardized mean differences (e.g., response, remission). However, such outcomes are infrequently reported. We strongly encourage trialists to also report on other metrics of treatment success. Third, while the evidence for non-trauma-focused treatments is encouraging, we note the wide range of treatments included in this category. As more data accumulates, more fine-grained meta-analytic reviews will become feasible. Fourth, the present work did not compare psychological interventions to pharmacotherapies.

In conclusion, the present review suggests that psychological therapies for PTSD are not differentially effective when comparing adults with single- vs. multiple-event-related PTSD, which is encouraging for clinical practice.

Contributors
THH and NM conceived the study. THH, RMS, MSB and NM designed the project and pre-registered its methodology. THH and AK independently conducted the systematic literature search and data extractions (outcome data and trial characteristics). MSB and AK independently performed the first data extractions with regards to trauma frequency. Thereafter, all authors were involved in the categorization into single vs. multiple trauma trials. THH and AK independently performed the risk of bias assessment. THH performed the analyses. THH, RMS and NM wrote a first draft of the manuscript. All authors have contributed to and approved the final version of the manuscript.

Declaration of interest
THH is a licensed CBT therapist. RMS occasionally receives payment (e.g. from universities, private training providers) for training therapists in the delivery of "Cognitive Therapy for PTSD" for children and adolescents. RMS is a co-investigator or chief investigator on four NIHR- or MRC-funded clinical trials of psychological therapies, particularly Cognitive Therapy for PTSD, in children and young people. The institution RMS is working at (University of East Anglia) has received payment through these awards. The institution RMS is working at part owns the intellectual property for an on-line guided self-help version of Cognitive Therapy for PTSD for children and young people as a result of my involvement in one of these trials. RMS was the chair of a steering committee for a trial addressing the on-line treatment of PTSD in adults. AK is not a licensed psychotherapist and has no conflict of interest to declare. MSB has served as a leader of implementation of TF-CBT in Norway during the last two years as part of her researcher position at her institution (NKVTS). The institution of MSB receives money from the Norwegian government for training and implementing evidence-based treatment for PTSD in generalist clinics (77% of all national clinics). MSB is reimbursed for her position as a group leader in this implementation endeavour. MSB is a licensed psychotherapist. NM is a licensed CBT therapist and occasionally receives payment from private training providers for training therapists in psychotherapy.

Data sharing
All presented data are publicly accessible. The datasets and R scripts to reproduce results are available on request via email to the corresponding author.

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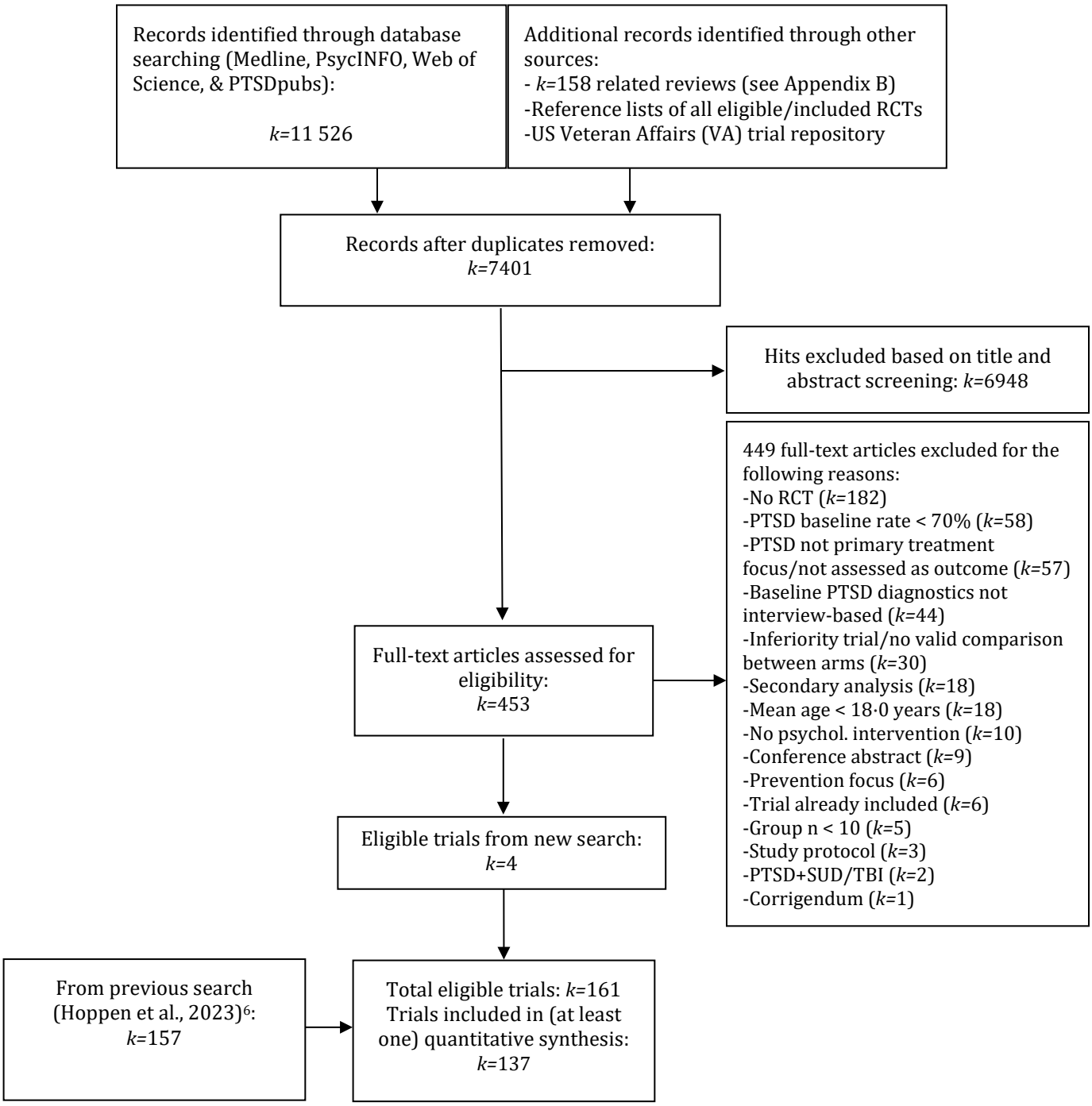

Figure 1: *Study selection*

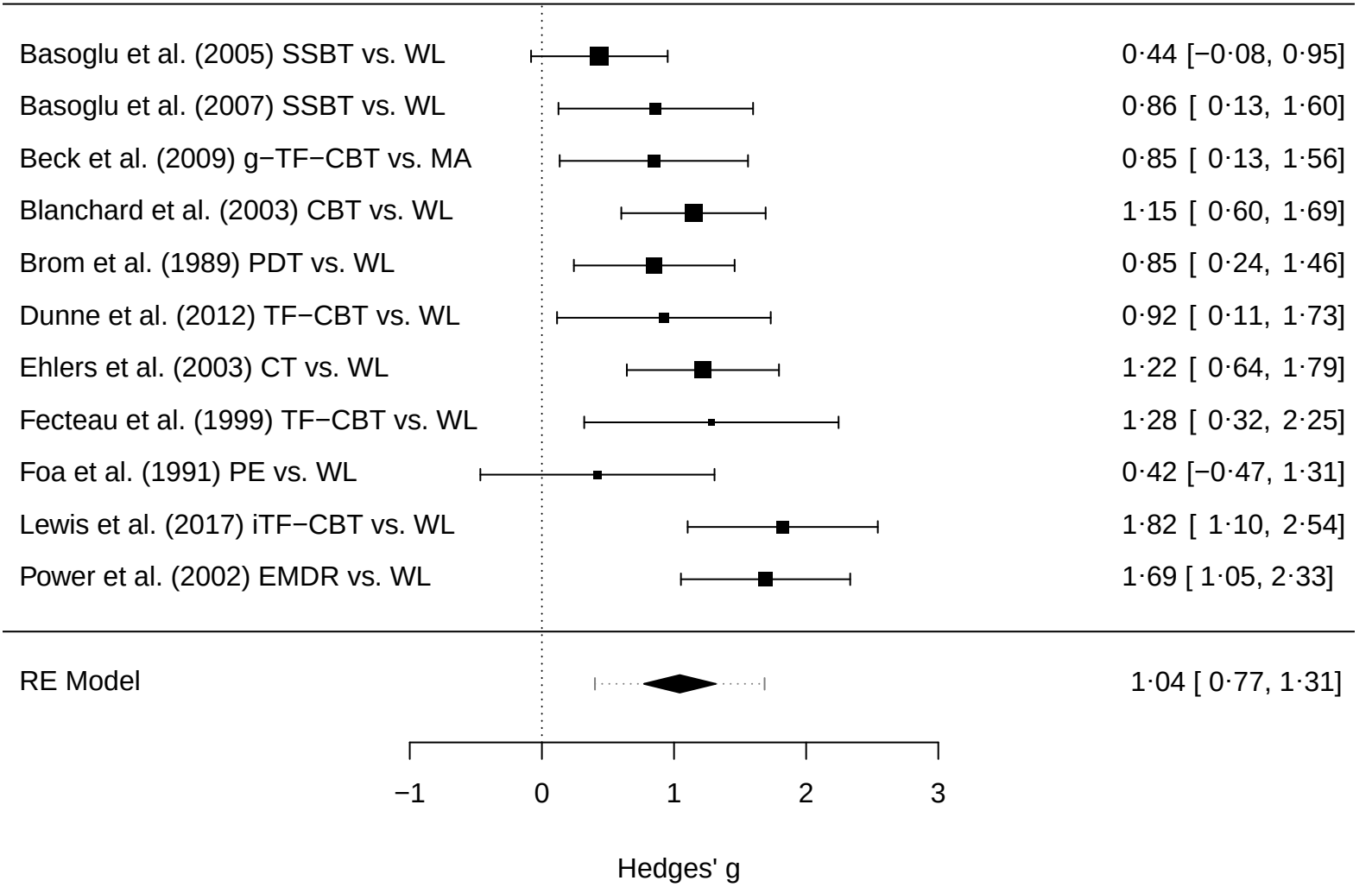

Figure 2: *Forest plot depicting the short-term efficacy of psychological interventions vs. passive control conditions in samples with single-event-related PTSD.*
CBT = cognitive behavior therapy; CT = cognitive therapy for PTSD; EMDR = Eye movement desensitization and reprocessing; g-TF-CBT = group trauma-focused cognitive behavior therapy; iTF-CBT = internet-delivered trauma-focused cognitive behavior therapy; MA = minimal attention; PE = prolonged exposure; PDT = psychodynamic therapy; SSBT = single-session behavioral therapy; TF-CBT = trauma-focused cognitive behavior therapy; WL = wait list control condition. Values are standardized mean differences (i.e., Hedges' g) with 95% confidence intervals derived from the random effects meta-analysis. The pooled effect is depicted in the diamond which stretches along the 95% confidence interval of the pooled effect. The error bars of the diamond denote the 95% prediction interval of the pooled effect.

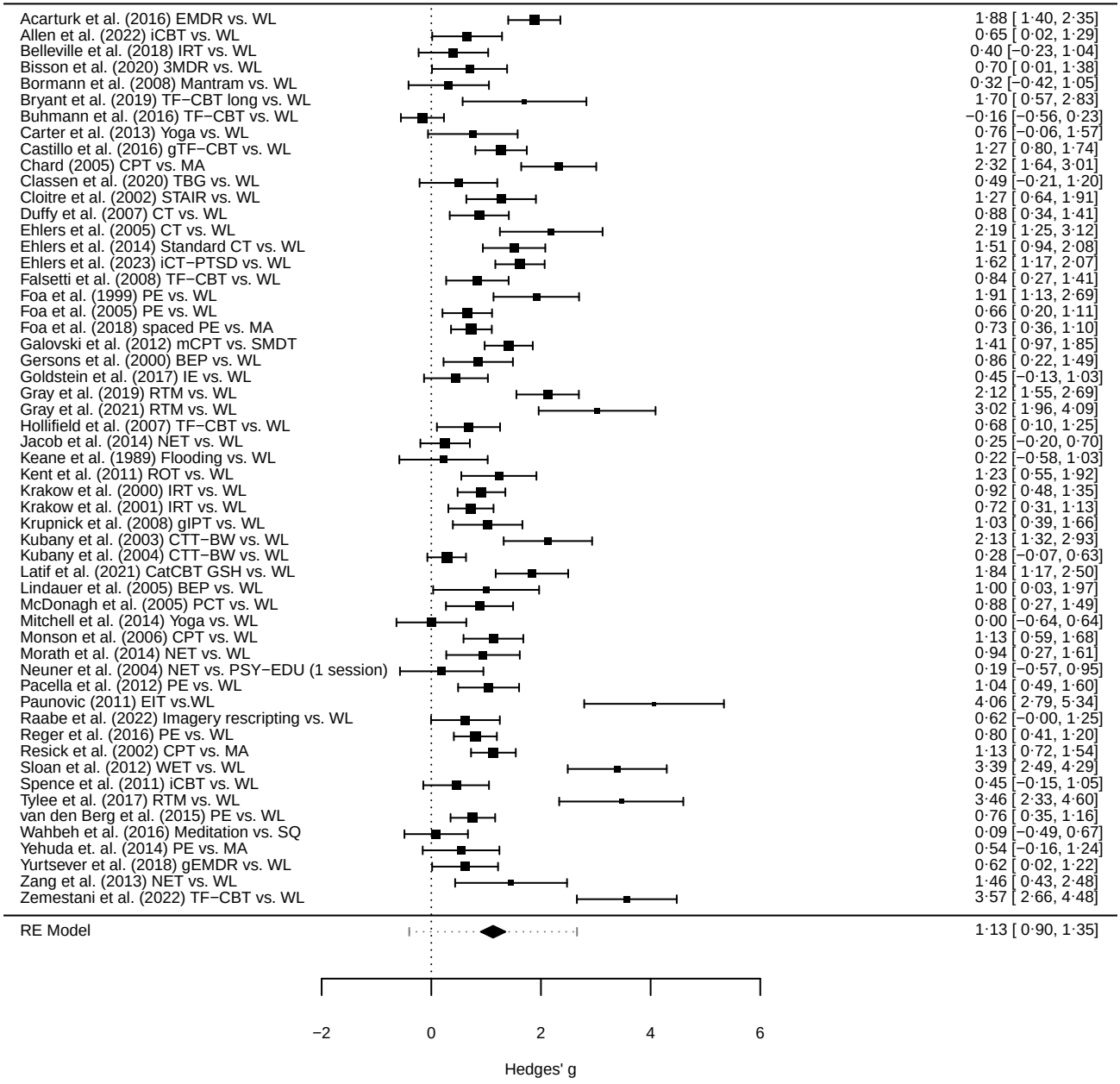

Figure 3: *Forest plot depicting the short-term efficacy of psychological interventions vs. passive control conditions in samples with multiple-event-related PTSD.*

3MDR = multi-modular motion-assisted memory desensitization and reconsolidation; BEP = brief eclectic therapy; CatCBT GSH = culturally adapted CBT-based guided self-help; CPT = cognitive processing therapy; CT = cognitive therapy for PTSD; CTT-BW = cognitive trauma therapy for battered women; EIT = Exposure Inhibition Therapy; EMDR = Eye movement desensitization and reprocessing; gEMDR = group EMDR; gIPT= group interpersonal therapy; g-TF-CBT = group trauma-focused cognitive behavior therapy; iCBT = internet-delivered cognitive behavior therapy; iCT-PTSD = internet-delivered cognitive therapy for PTSD; IE = imaginal exposure; IRT = imagery rehearsal therapy; MA = minimal attention; Mantram = mantram meditation; mCPT = modified cognitive processing therapy; NET = narrative exposure therapy; PCT = present centered therapy; PE = prolonged exposure; PSY (1 session) = single-session psychoeducation; ROT = resilience oriented treatment; RTM = reconsolidation of traumatic memories; SMDT = symptom monitoring delayed treatment; spaced PE = prolonged exposure delivered in standard frequency (trial also involved intense frequency arm); STAIR = skills training in affective and interpersonal regulation; Standard CT = cognitive therapy for PTSD delivered in standard frequency (trial also involved intense frequency arm); SQ = sitting quietly; TBG = trauma and the body group; TF-CBT = Trauma-focused cognitive behavior therapy; WET = written exposure therapy; WL = wait list control condition. Values are standardized mean differences (i.e., Hedges' g) with 95% confidence intervals derived from the random effects meta-analysis. The pooled effect is depicted in the diamond which stretches along the 95% confidence interval of the pooled effect. The error bars of the diamond denote the 95% prediction interval of the pooled effect. Please note that multiple trauma trials were defined as trials with at least 50% of participants with multiple-event-related PTSD. Results with a more conservative sensitivity analysis (i.e., ≥ 90% multiple-trauma-related PTSD) can be found in Appendices H and I in the online supplementary materials.

Comparison	*Single vs· multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
All psychological interventions vs. passive control conditions	single	11	**1·04*** **	**0·77 to 1·31 (0·40 to 1·69)**	43·05 (0·09)	1·85	0·78
	multiple	55	1·13***	0·90 to 1·35 (-0·40 to 2·66)	87·41*** (0·60)	1·74	
	multiple outlier-corrected	54	1·08***	0·87 to 1·30 (-0·33 to 2·50)	85·80*** (0·51)	1·80	0·89
All psychological interventions vs. active control conditions	single	4	0·78*	0·15 to 1·40 (-0·40 to 1·95)	63·83* (0·26)	2·40	0·20
	multiple	39	0·44***	0·32 to 0·56 (-0·08 to 0·97)	50·71*** (0·07)	4·06	
	multiple outlier-adjusted	38	0·42***	0·30 to 0·53 (-0·05 to 0·89)	45·17** (0·05)	4·29	0·16
	multiple trim-and-fill-adjusted	47	0·32***	0·18 to 0·46	68·41*** (0·16)	5·62	n.a.
TF-CBT vs. passive control conditions	single	11	**1·00*** **	**0·77 to 1·24 (0·55 to 1·46)**	25·47 (0·04)	1·92	0·31
	multiple	37	1·32***	1·01 to 1·63 (-0·45 to 3·09)	90·60*** (0·79)	1·54	
TF-CBT vs. active control conditions	single			n.a. (k = 3)			n.a.
	multiple	20	0·49***	0·32 to 0·66 (-0·09 to 1·07)	56·28*** (0·08)	3·70	
EMDR vs. passive control conditions	single			n.a. (k = 1)			n.a.
	multiple	4	0·97**	0·35 to 1·59 (-0·31 to 2·25)	82·22*** (0·33)	1·97	
EMDR vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	8	**0·37** **	**0·13 to 0·60 (0·07 to 0·67)**	8·07 (0·01)	4·88	
Non-TF interventions vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	13	0·74***	0·47 to 1·01 (-0·06 to 1·54)	63·04** (0·15)	2·51	
Non-TF interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	13	0·39***	0·21 to 0·57 (-0·03 to 0·81)	38·89* (0·04)	4·59	
Other-TF interventions vs. passive control conditions	single			n.a. (k = 0)			n.a.
	multiple	6	**0·75*** **	**0·53 to 0·98 (0·53 to 0·98)**	0·00 (0·00)	2·47	
TF-CBT vs. non-TF interventions	single			n.a. (k = 3)			n.a.
	multiple	21	**0·13** **	**0·05 to 0·21 (0·05 to 0·21)**	0·00 (0·00)	13·67	
	multiple outlier-adjusted	19	**0·13** **	**0·05 to 0·21 (0·05 to 0·21)**	0·00 (0·00)	13·67	n.a.
TF-CBT vs. EMDR	single			n.a. (k = 2)			n.a.
	multiple	5	0·15	-0·20 to 0·49 (-0·37 to 0·66)	23·19 (0·04)	12·02	

ACC=Active Control Conditions; EMDR=Eye Movement Desensitization and Reprocessing; *k*=number of (independent) trials included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis); Non-TF interventions=non-trauma-focused psychological interventions; other-TF interventions=other trauma focused psychological interventions (i.e.; non-TF-CBT & non-EMDR interventions with trauma focus); PCC=Passive Control Conditions; PI=Prediction Interval; TF-CBT=Trauma-focused Cognitive Behavioral Therapy. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy. Note that prediction intervals are not supplied by the trim-and-fill method.
*p<0·05; **p<0·01; ***p<0·001

[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥50% participants with multiple-event-related PTSD.

[b]testing differences in efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes)

Table 1: Short-term efficacy (i.e., at treatment endpoint) of psychological interventions for adult PTSD for trials involving participants with single vs. multiple trauma exposure

Comparison	*Single vs. multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
Mid-term efficacy (≤ 5 months follow-up)							
All psychological interventions vs. passive control conditions	single	4	**1·26*** **	**0·95 to 1·58 (0·95 to 1·58)**	0·00 (0·00)	1·59	0·35
	multiple	14	0·88***	0·47 to 1·29 (-0·59 to 2·35)	85·62*** (0·52)	2·15	
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	21	0·42***	0·24 to 0·60 (-0·21 to 1·05)	58·02*** (0·10)	4·29	
TF-CBT vs. passive control conditions	single	4	**1·26*** **	**0·95 to 1·58 (0·95 to 1·58)**	0·00 (0·00)	1·59	0·65
	multiple	8	1·05**	0·39 to 1·70 (-0·83 to 2·92)	90·54*** (0·80)	1·85	
TF-CBT vs. active control conditions	Single			n.a. (k = 0)			n.a.
	multiple	13	0·59***	0·38 to 0·80 (0·00 to 1·18)	51·88* (0·08)	3·09	
Non-TF interventions vs. passive control conditions	single			n.a. (k = 0)			n.a.
	multiple	4	**0·36** **	**0·10 to 0.63 (0·10 to 0.63)**	0·00 (0·00)	4·93	
Non-TF interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	6	0·14	-0·06 to 0·33 (0·06 to 0·33)	0·00 (0·00)	13·08	
TF-CBT vs. non-TF interventions	single			n.a. (k = 3)			n.a.
	multiple	15	0·21**	0·07 to 0·34 (-0·16 to 0·58)	48·01* (0·03)	8·60	
Long-term efficacy (> 5 months follow-up)							
All psychological interventions vs. passive control conditions	single			n.a. (k = 1)			n.a.
	multiple	4	**0·60*** **	**0·38 to 0·82 (0·38 to 0·82)**	0·00 (0·00)	3·05	
All psychological interventions vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	15	0·60***	0·37 to 0·82 (-0·10 to 1·29)	58·49** (0·11)	3·06	
TF-CBT vs. passive control conditions	single			n.a. (k = 1)			n.a.
	multiple	4	**0·60*** **	**0·38 to 0·82 (0·38 to 0·82)**	0·00 (0·00)	3·05	
TF-CBT vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	14	**0·65*** **	**0·42 to 0·87 (0·02 to 1·27)**	50·64* (0·09)	2·84	
TF-CBT vs. non-TF interventions	single			n.a. (k = 1)			n.a.
	multiple	12	0·13*	0·02 to 0·24 (-0·01 to 0·27)	5·47 (0·00)	13·62	
	multiple outlier-adjusted	10	0·08	-0·02 to 0·19 (-0·02 to 0·19)	0·00 (0·00)	20·89	n.a.
	multiple trim-and-fill adjusted	13	0·12*	0·01 to 0·23	8·36 (0·00)	15·13	n.a.

ACC=Active Control Conditions; *k*=number of (independent) trials included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis); non-TF interventions=non-trauma-focused psychological interventions; PCC=Passive Control Conditions; PI=Prediction Interval; TF-CBT=Trauma-focused Cognitive Behavioral Therapy. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy. Note that prediction intervals are not supplied by the trim-and-fill method.

*p<0·05; **p<0·01; ***p<0·001

[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥50% participants with multiple-event-related PTSD.

[b]testing differences in efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes)

Table 2: Mid-term efficacy and long-term efficacy of psychological interventions for adult PTSD for trials involving participants with single vs. multiple trauma exposure

Supplementary material

The short-, mid-, and long-term efficacy of psychological interventions for adult PTSD following exposure to single vs. multiple traumatic events: A meta-analysis of randomized controlled trials

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Appendix A: Search strategy used for systematic literature search in databases

Databases	Search Terms
MEDLINE and PsycINFO	(TI (ptsd OR ptss OR post-traumatic stress OR posttraumatic stress OR post-traumatic syndrome OR posttraumatic syndrome) OR AB (ptsd OR ptss OR post-traumatic stress OR posttraumatic stress OR post-traumatic syndrome OR posttraumatic syndrome) OR SU (ptsd OR ptss OR post-traumatic stress OR posttraumatic stress OR post-traumatic syndrome OR posttraumatic syndrome)) AND (TI (treatment* OR intervention* OR therap* OR psychotherap* OR exposure OR counse*ing OR trial*) OR AB (treatment* OR intervention* OR therap* OR psychotherap* OR exposure OR counse*ing OR trial*) OR SU (treatment* OR intervention* OR therap* OR psychotherap* OR exposure OR counse*ing OR trial*))
PTSDpubs	(ptsd OR ptss OR post-traumatic stress OR posttraumatic stress OR post-traumatic syndrome OR posttraumatic syndrome) AND (treatment* OR intervention* OR therap* OR psychotherap* OR exposure OR counse*ing OR trial*)
Web of Science	ALL=(ptsd OR ptss OR post-traumatic stress OR posttraumatic stress OR post-traumatic syndrome OR posttraumatic syndrome) AND ALL=(treatment* OR intervention* OR therap* OR psychotherap* OR exposure OR counse*ing OR trial*)

Note that the search string contains APA thesaurus/MeSH search terms (i.e., “posttraumatic stress”, “treatment”, “intervention”, “psychotherapy”, “exposure” and “counseling” as well as additional terms (e.g., “post-traumatic stress”, “PTSD”, “trial”, “therapy”) in case a particular trial was not registered under these APA thesaurus/MeSH search terms.

Appendix B: References of related reviews screened as part of the systematic literature search

Abi Zeid Daou, Kim Roger (2022). Refugee Mothers Mental Health and Social Support Needs: A Systematic Review of Interventions for Refugee Mothers. *Europe's Journal of Psychology*, *18*(3), 337–349. https://doi.org/10.5964/ejop.4665

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Akbari, M., Seydavi, M., Davis, C. H., Levin, M. E., Twohig, M. P., & Zamani, E. (2022). The Current Status of Acceptance and Commitment Therapy (ACT) in Iran: A Systematic Narrative Review. *Journal of Contextual Behavioral Science*, *26*, 85–96.

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Alvarez Garcia, C., Nocete Navarro, L., & Sanz Giancola, A. (2022). Dealing with Posttraumatic Nightmares. *European Psychiatry*, *65*(S1), 647. https://doi.org/10.1192/j.eurpsy.2022.1735

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Balkin, R. S., Lenz, A. S., Russo, G. M., Powell, B. W., & Gregory, H. M. (2022). Effectiveness of EMDR for decreasing symptoms of over-arousal: A meta-analysis. *Journal of Counseling & Development*, *100*(2), 115–122. https://doi.org/10.1002/jcad.12418

Bandelow, B., Allgulander, C., Baldwin, D. S., Da Costa, D. L. C., Denys, D., Dilbaz, N., Domschke, K., Eriksson, E., Fineberg, N. A., Hättenschwiler, J., Hollander, E., Kaiya, H., Karavaeva, T., Kasper, S., Katzman, M., Kim, Y.-K., Inoue, T., Lim, L., Masdrakis, V., . . . Zohar, J. (2023). World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for treatment of anxiety, obsessive-compulsive and posttraumatic stress disorders - Version 3. Part II: Ocd and PTSD. *The World Journal of Biological Psychiatry*, *24*(2), 118–134. https://doi.org/10.1080/15622975.2022.2086296

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Appendix C: Overview of categorizations into families of psychological interventions and control conditions

Overview of categorizations	
Psychological interventions categories/families and their uniqueness and overlaps	
Trauma-focused cognitive behavior therapy (TF-CBT)	Cognitive therapy (CT), cognitive processing therapy (CPT), prolonged exposure (PE), imaginal exposure (IE), exposure therapy (ET), in-vivo exposure, trauma treatment protocol (TTP), immediate cognitive therapy, self-exposure and cognitive restructuring, narrative exposure therapy (NET), implosive (flooding) therapy, stress inoculation training with prolonged exposure (SITPE), impact of killing, exposure inhibition therapy, image habituation training (IHT), reconsolidation of traumatic memories (RTM), skills training in affective and interpersonal regulation (STAIR) plus modified PE, structure approach Therapy (SAT), dialectic behavior therapy for PTSD (PTSD-DBT). AND modified or internet-/technology-based versions of the above, e.g. virtual reality exposure therapy (VRET).
Eye Movement Desensitization and Reprocessing (EMDR)	Various protocols but all labeled EMDR
Other psychological interventions with a trauma focus	Dialogical (exposure) therapy, brief eclectic psychotherapy, imagery rehearsal therapy (IRT), imagery rescripting (ImRs), stabilizing group treatment for complex PTSD, trauma affect regulation: guide for education and therapy (TARGET), trauma counselling.
Non-trauma focused psychological interventions	Interpersonal psychotherapy (IPT), present centered therapy (PCT), meta-cognitive therapy (MCT), supportive psychotherapy, integrative exercise, seeking safety, transcendental meditation (TMed) / compassion meditation (CM), yoga intervention (YI) / holistic yoga program / trauma-informed yoga, (telehealth) mindfulness (TM), emotion focused supportive therapy (EFST), somatic experiencing (SE), culturally adapted cognitive behavioral therapy (CA-CBT, CBT, but not trauma-focused), trauma and the body group (TBG), behavioral activation (BA), group mantram repetition program (MRP), resilience oriented treatment for PTSD (ROT), affect-management treatment, from survivor to thriver program, delivery of self-training and education for stressful situations (DESTRESS-PC).
Control Groups	
Passive control conditions (PCC)	Waitlist control conditions (WL), single session psychoeducation, minimal attention, sitting quietly.
Active control conditions (ACC)	Supportive counseling, treatment-as-usual (TAU), care-as-usual (CAU), stress inoculation therapy (SIT), active listening, health education, relaxation training/therapy, progressive muscle relaxation (PMR) / applied muscle relaxation (AMR), self-help booklet, PTSD family education, pill placebo.

Appendix D: Risk of bias assessment – quality criteria

Quality criteria based on Cuijpers et al. (2010), sum score ranges from 0 to 8

1. All participants met diagnostic criteria for PTSD at baseline as assessed via a diagnostic interview based on any iteration of the DSM or ICD	1. Positive 0. Negative / insufficient information
2. Use of treatment manual *(i.e., published, or specifically designed for the study; **all** psychological interventions of the RCT/included in the analyses were manual-based* *⍰ insufficient: manual mentioned but without a reference/specification)*	1. Positive 0. Negative / insufficient information
3. Therapists were trained in applying the manual *(i.e., specifically for the study or general training for respective manual)*	1. Positive 0. Negative / insufficient information
4. Treatment integrity was checked formally *(i.e., by regular supervision and/or recordings and/or systematic screenings of protocol adherence with a standardized instrument)*	1. Positive 0. Negative / insufficient information
5. Data analyzed with intent-to-treat analysis *(i.e., all persons who were randomized to the conditions initially were included in analyses; insufficient: if authors stated that both ITT and completer analyses were performed but only reported on completer results)*	1. Positive 0. Negative / insufficient information
6. Study had an adequate level of statistical power to find effects and included $N \geq 50$ participants in the comparison groups (i.e., $n1+n2 \geq 50$) *(note: may differ across assessment timepoints due to attrition (in completer analyses))*	1. Positive 0. Negative / insufficient information
7. Randomization by independent (3rd) party *(e.g., independent person or computerized with valid randomization technique)*	1. Positive 0. Negative / insufficient information
8. Blind assessors for outcomes *(i.e., PTSD outcomes were assessed either in a diagnostic interviewer or via self-reports; insufficient: non-blinded interviewers)*	1. Positive 0. Negative / insufficient information

Appendix E: Risk of bias assessment – quality coding of eligible trials

Trial	Q1 - PTSD	Q2 - manual	Q3 - training	Q4 - integrity	Q5 - ITT	Q6 – N > 50	Q7 - random-ization	Q8 - blinding	Q sum score (out of 8)
Acarturk et al. (2016)	1	1	1	1	1	1	1	1	8
Akbarian et al. (2015)	1	1	1	0	1	0	0	1	5
Allen et al. (2022)	1	1	1	1	0	0	1	1	6
Andersen et al. (2021)	1	1	1	1	0	1	1	1	7
Asukai et al. (2010)	1	1	1	1	1	0	1	1	7
Basoglu et al. (2005)	1	1	0	1	0	1	1	1	6
Basoglu et al. (2007)	1	1	1	0	1	0	1	1	6
Beck et al. (2009)	1	1	1	1	0	0	0	1	5
Bellehsen et al. (2021)	1	1	0	0	1	0	1	1	5
Belleville et al. (2018)	1	1	0	1	1	0	1	1	6
Bisson et al. (2020)	1	1	1	1	0	0	1	1	6
Blanchard et al. (2003)	0	1	1	1	1	1	0	1	6
Bohus et al. (2013)	1	1	1	1	1	1	0	1	7
Bormann et al. (2008)	1	1	0	1	0	0	1	1	5
Bormann et al. (2013)	1	0	0	1	1	1	1	1	6
Boterhoven de Haan et al. (2020)	1	1	1	1	0	1	1	1	7
Brom et al. (1989)	1	0	1	1	0	0	0	1	4
Brom et al. (2017)	1	1	1	1	0	1	1	1	7
Bryant et al. (2003)	1	0	1	1	1	0	1	1	6
Bryant et al. (2011)	1	0	1	0	1	0	1	1	5
Bryant et al. (2019)	1	0	0	1	0	0	1	1	4
Buhmann et al. (2016)	1	0	1	1	1	1	1	1	7
Butollo et al. (2016)	1	1	1	1	1	1	0	1	7
Capezzani et al. (2013)	1	0	1	0	1	0	0	1	4
Carletto et al. (2016)	1	1	1	1	0	0	1	1	6

Carlson et al. (1998)	1	1	1	1	0	0	0	0	4
Carlsson et al. (2018)	1	1	0	1	1	1	1	1	7
Carter et al. (2013)	1	1	1	0	0	0	1	1	5
Castillo et al. (2016)	1	1	0	1	1	1	0	1	6
Chard (2005)	1	1	1	1	0	1	0	1	6
Classen et al. (2020)	0	0	0	0	0	0	0	1	1
Cloitre et al. (2002)	1	1	1	1	0	0	0	1	5
Cloitre et al. (2010)	1	1	1	1	1	1	1	1	8
Cottraux et al. (2008)	1	1	1	1	0	0	1	1	6
Davis et al. (2020)	1	1	0	1	0	1	1	1	6
Devilly et al. (1998)	1	1	1	0	0	0	0	0	3
Devilly et al. (1999)	1	1	1	1	0	0	0	0	4
Dorrepaal et al. (2012)	1	1	0	0	1	1	1	1	6
Duffy et al. (2007)	1	1	1	0	1	1	1	1	7
Dunne et al. (2012)	1	1	1	0	1	0	0	0	4
Echeburua et al. (1997)	1	0	1	0	1	0	0	0	3
Ehlers et al. (2003)	1	1	0	1	1	1	1	1	7
Ehlers et al. (2005)	1	1	1	1	1	0	0	1	6
Ehlers et al. (2014)	1	1	1	1	1	1	1	1	8
Ehlers et al. (2023)	1	1	1	1	1	1	1	1	8
Engel et al. (2015)	1	1	1	1	0	1	1	1	7
Ertl et al. (2011)	1	1	1	1	0	1	0	1	6
Falsetti et al. (2008)	1	1	1	1	1	1	0	1	7
Fecteau et al. (1999)	1	1	1	1	0	0	1	1	6
Foa et al. (1991)	1	1	1	1	0	0	0	1	5
Foa et al. (1999)	1	1	1	1	0	0	0	1	5
Foa et al. (2005)	1	1	1	1	1	1	0	1	7
Foa et al. (2018)	1	1	1	1	1	1	1	1	8
Fonzo et al. (2017)	1	1	1	1	1	1	0	0	6

Forbes et al. (2012)	1	1	0	1	1	1	1	1	7
Ford et al. (2011)	0	1	1	1	1	1	1	0	6
Ford et al. (2013)	0	1	1	1	0	1	1	1	6
Galovski et al. (2012)	1	1	1	1	1	1	1	1	8
Gersons et al. (2000)	1	1	1	1	1	0	1	1	7
Ghafoori et al. (2017)	1	0	1	1	1	1	1	0	6
Goldstein et al. (2017)	0	0	1	1	1	0	0	1	4
Gray et al. (2019)	1	1	0	1	1	1	1	1	7
Gray et al. (2021)	1	1	1	1	0	0	1	1	6
Heffner et al. (2016)	0	1	0	0	0	0	0	0	1
Hensel-Dittmann et al. (2011)	1	1	1	1	0	0	1	1	6
Hinton et al. (2011)	1	1	1	0	1	0	0	1	5
Hollifield et al. (2007)	1	1	0	0	1	0	1	1	5
Ivarsson et al. (2014)	1	1	1	1	1	1	1	1	8
Jacob et al. (2014)	1	1	1	1	1	1	1	1	8
Jalal et al. (2020)	1	1	0	0	0	0	0	1	3
Jensen et al. (1994)	1	1	1	0	0	0	0	0	3
Johnson et al. (2011)	0	1	1	1	0	1	1	0	5
Johnson et al. (2016) post-treatment	0	1	1	1	0	1	1	1	6
Johnson et al. (2016) FU2	0	1	1	1	0	0	1	1	5
Johnson et al. (2020)	1	1	1	1	0	1	0	1	6
Karatzias et al. (2011)	1	1	1	1	1	0	1	1	7
Keane et al. (1989)	1	1	0	0	0	0	0	0	2
Kearney et al. (2021)	1	1	1	1	1	1	1	1	8
Kelly et al. (2021) post-treatment	1	1	1	0	0	1	1	0	5
Kelly et al. (2021) FU	1	1	1	0	0	0	1	0	4
Kent et al. (2011)	1	0	1	0	1	0	0	1	4
Krakow et al. (2000)	0	1	0	0	0	1	0	1	3
Krakow et al. (2001)	0	1	0	0	0	1	1	1	4

Krupnick et al. (2008)	1	1	1	1	1	0	0	0	5
Kubany et al. (2003)	1	1	1	0	1	0	0	1	5
Kubany et al. (2004)	1	1	1	1	1	1	0	1	7
Lang et al. (2019)	1	1	1	0	0	0	1	1	5
Langkaas et al. (2017)	1	1	1	1	1	1	1	1	8
Latif et al. (2021)	1	1	0	1	1	1	1	1	7
Laugharne et al. (2016)	1	1	1	1	1	0	1	1	7
Lee et al. (2002)	1	1	0	1	0	0	1	0	4
Lehavot et al. (2021)	1	0	1	1	1	1	0	1	7
Lely et al. (2019)	1	1	1	1	1	0	1	1	7
Lewis et al. (2017)	1	1	1	1	1	0	1	1	7
Lindauer et al. (2005)	1	1	1	1	1	0	1	1	7
Littleton et al. (2016) post-treatment	1	1	1	1	0	1	1	0	6
Littleton et al. (2016) FU	1	1	1	1	0	0	1	0	5
Litz et al. (2007)	1	1	1	1	0	0	0	1	5
Litz et al. (2021)	1	1	0	1	0	1	1	1	6
Maguen et al. (2017)	0	0	1	1	0	0	1	1	4
Marcus et al. (1997)	1	1	1	0	0	1	1	1	6
Markowitz et al. (2015)	1	0	1	1	1	1	1	1	7
Marks et al. (1998)	1	0	1	1	0	0	0	1	4
McDonagh et al. (2005)	1	1	1	1	1	0	0	1	6
McGuire Stanbury et al. (2020)	1	1	1	1	0	0	0	1	5
McLean et al. (2020)	1	1	1	1	0	0	0	1	5
Mitchell et al. (2014)	0	1	1	0	1	0	1	1	5
Monson et al. (2006)	1	1	1	1	1	1	0	1	7
Monson et al. (2012)	1	1	1	1	1	0	1	1	7
Morath et al. (2014)	1	1	1	1	0	0	1	1	6
Morland et al. (2022)	1	1	1	1	1	1	1	0	7
Mueser et al. (2008)	1	0	0	1	0	1	1	1	5

Nacasch et al. (2011)	1	1	1	1	1	0	1	1	7
NCT00607815	1	1	0	0	1	1	0	1	5
Neuner et al. (2004)	1	1	1	1	0	0	1	1	6
Neuner et al. (2008)	1	1	1	1	1	1	0	1	7
Neuner et al. (2010)	1	1	1	1	1	0	1	1	7
Nidich et al. (2018)	1	1	0	1	1	1	1	1	7
Nijdam et al. (2012)	1	1	1	1	0	1	1	1	7
Niles et al. (2012)	1	1	1	1	0	0	1	0	5
Orang et al. (2018)	1	1	1	0	0	0	1	1	5
Pacella et al. (2012)	1	1	1	1	1	1	1	1	8
Paunovic (2011)	1	0	1	0	0	0	0	0	2
Power et al. (2002) EMDR vs.WL	1	1	1	1	0	1	1	0	6
Power et al. (2002) other comparisons	1	1	1	1	0	0	1	0	5
Raabe et al. (2022)	1	1	1	1	1	0	1	1	7
Rauch et al. (2014)	1	1	1	0	0	0	0	1	4
Ready et al. (2018)	1	0	1	1	0	1	0	1	5
Reger et al. (2016)	1	1	1	1	1	1	1	1	8
Resick et al. (2002)	1	1	1	1	1	1	0	0	6
Resick et al. (2015)	1	0	1	1	1	1	0	1	6
Robjant et al. (2019)	1	1	1	1	0	1	1	1	7
Rothbaum et al. (2005)	1	1	1	1	0	0	0	1	5
Sautter et al. (2015)	1	1	1	1	1	1	0	1	7
Schaal et al. (2009)	1	1	1	1	1	0	1	1	7
Scheck et al. (1998)	0	1	1	0	0	1	1	1	5
Schnurr et al. (2003)	1	0	1	1	0	1	1	1	6
Schnurr et al. (2007)	1	0	1	1	1	1	1	1	7
Sloan et al. (2011)	1	1	1	1	0	0	0	1	5
Sloan et al. (2012)	1	0	1	1	1	0	1	1	6
Sloan et al. (2018)	1	1	1	1	1	1	1	1	8

Spence et al. (2011)	1	1	1	1	1	0	1	1	7
Stenmark et al. (2013)	1	1	1	1	0	1	1	1	7
Suris et al. (2013)	1	1	1	1	0	1	1	1	7
Taylor et al. (2003)	1	1	1	1	1	0	0	1	6
ter Heide et al. (2016)	1	1	1	1	0	1	1	1	7
Thorp et al. (2019) post-treatment	1	1	1	1	0	1	0	1	6
Thorp et al. (2019) FU	1	1	1	1	0	0	0	1	5
Tylee et al. (2017)	1	1	0	1	1	0	0	1	5
van den Berg et al. (2015)	1	1	1	1	1	1	1	1	8
van der Kolk et al. (2007)	1	1	1	1	1	1	1	1	8
van der Kolk et al. (2014)	1	1	0	0	1	1	0	1	5
van Gelderen et al. (2020)	1	1	1	1	1	0	1	1	7
Vaughan et al. (1994)	0	1	1	0	0	0	0	1	3
Vera et al. (2021)	1	1	0	1	0	1	1	1	6
Wagner et al. (2019)	1	1	1	1	0	1	0	1	6
Wahbeh et al. (2016)	1	1	0	0	0	0	1	0	3
Wells et al. (2012)	1	1	0	1	1	0	1	1	6
Wells et al. (2015)	1	1	1	1	0	0	1	1	6
Yehuda et al. (2014)	1	1	1	1	1	1	0	1	7
Yurtsever et al. (2018)	1	1	1	0	0	0	1	1	5
Zang et al. (2013)	1	1	1	1	1	0	1	1	7
Zang et al. (2014)	1	1	1	1	1	0	1	1	7
Zemansti et al. (2022)	1	1	1	1	1	0	1	1	7
Zlotnick et al. (1997)	1	0	1	0	0	0	0	1	3
Zoellner et al. (2017)	1	1	1	1	1	0	1	0	6

Note: Quality sum scores have a possible range from 0 to 8.

Appendix F. Characteristics of the 161 eligible trials including the 137 trials included in quantitative synthesis

Publication, conditions/category, (number & length of sessions)	Single (S) vs. multiple (M/M+) vs. unclear (U) trauma trial[a], mean nr. of lifetime traumatic events	N at post-treatment assessment	% fulfilling PTSD diagnosis at baseline	Outcome measure	Country	Mean age (SD or range)	Longest included follow up assessment in month	Treatment format	Statistical analysis	% female	Type of trauma	Study quality
Acarturk et al., 2016												
EMDR/EMDR (7 sessions, 90 min.)	M+,	49	100	IES-R	Turkey (Syrian refugees)	33·32 (11·09)	1	Individual	ITT	74	Mass conflict	8
WL/PCC	n.r.	49				34·04 (10·00)						
Akbarian et al., 2015												
CBT/TF-CBT (10 sessions, 60 – 90 min.)	U,	14	100	IES-R	Iran	32·07 (5·76)	n.a.	Group	ITT	79	Various types	5
TAU/ACC (n.r.)	n.r.	14				31·21 (6·10)		Individual				
Allen et al., 2022												
iCBT/TF-CBT (6 sessions, n.r.)	M,	21	100	PCL-C	Australia	41·60	n.a.	Individual	Compl.	90	Various types	6
WL/PCC	n.r.	19										
Andersen et al., 2021												
TF-CBT + exercise/TF-CBT (10 sessions, 60 – 90 min.)	S	43	100	CAPS	Australia and Denmark	39·71 (13·3)	12	Individual	Compl.	74	Motor vehicle accident	7
		46				44·49 (11·6)		Individual		72		
SPT + exercise/non-TF-PIs (10 sessions, 60 min.)												
Asukai et al., 2010												
PE/TF-CBT (8-15 sessions, 90 min.)	S	12	100	CAPS	Japan	27·10 (5·40)	n.a.	Individual	ITT	88	Various types	7
TAU/ACC (n.r.)		12				31·40 (8·80)		Individual				
Basoglu et al., 2005												
SSBT/TF-CBT (1 session, 60 min.)	S	31	100	CAPS	Turkey	36·30 (11·50)	n.a.	Individual	Compl.	84	Disaster	6
WL/PCC		28										

Basoglu et al., 2007												
SSBT/TF-CBT (1 session, 69 – 130 min.)	S	16	100	CAPS	Turkey	34·00 (11·00)	n.a.	Individual	Compl.	87	Disaster	6
WL/PCC		15										
Beck et al., 2009												
CBT/TF-CBT (14 sessions, 120 min.)	S	17	100	CAPS	USA	43·30 (12·80)	n.a.	Group	Compl.	82	Motor	5
MA/PCC		16						Individual			vehicle accident	
Bellehsen et al., 2021												
TMed/non-TF-PIs (16 sessions, 60 min.)	M+,	20	100	CAPS	USA	52·9 (10·7)	n.a.	Group	ITT	20	Combat	5
TAU/ACC (n.r.)	n.r.	20				50·3 (12·2)				10	and other types	
Belleville et al., 2018												
IRT/other-TF-PIs (5 sessions, 60 min.)	M,	19	100	MPSS	Canada	29·45 (9·05)	n.a.	Individual	ITT	88	Sexual	6
WL/PCC	n.r.	20				31·45 (10·32)					assault	
Bisson et al., 2020												
3MDR/iEMDR (9 sessions, average 63 min)	M+,	16	100	CAPS	UK	40·2 (10·13)	n.a.	Individual	Compl.	0	Various	6
WL/PCC	n.r.	19				44·0 (11·97)					types	
Blanchard et al., 2003												
CBT/TF-CBT (10 sessions, n.r.)	S	37	77.78	CAPS	USA	40·60 (11·00)	3	Individual	ITT	78	Motor	6
SPT/non-TF-PIs (10 sessions, n.r.)		36	77.78			40·60 (13·10)		Individual		78	vehicle	
WL/PCC		25	87.50			42·10 (10·90)				63	accident	
Bohus et al., 2013												
DBT-PTSD/TF-CBT (23 sessions, 45 min.)	M,	36	100	CAPS	Germany	35·14 (10·60)	3	Individual	ITT	100	Childhood	7
TAU/ACC (n.r.)	n.r.	38				36·71 (9·84)		Individual			sexual abuse	

Bormann et al., 2008												
Mantram interv./non-TF-PIs	M+,	14	100	CAPS	USA	56·00 (6·57)	n.r.	Group	Compl.	0	Combat	5
(6 sessions, 90 min.)	n.r.											
WL/PCC		15										
Bormann et al., 2013												
Mantram interv./non-TF-PIs	M+,	71	100	CAPS	USA	57·00 (10·10)	n.a.	Group	ITT	3	Combat	6
(6 sessions, 90 min.)	n.r.	75						Individual				
TAU/ACC (n.r.)												
Boterhoven de Haan et al., 2020												
EMDR/EMDR (12 sessions, 90 min.)	M,	68	93	CAPS	Australia	38·96 (11·51)	12	Individual	ITT	80	Childhood	7
IR/other-TF-PIs (12 sessions, 90 min.)	n.r.	66			Germany NL	38·08 (10·85)		Individual		73	trauma, various types	
Brom et al., 1989												
Trauma desensitization/TF-CBT (n.r.)	S	28	100	IES	NL	42·00 (n·r·)	3	Individual	0	79	Various	4
Psychodynamic Therapy/non-TF-PIs (n.r.)		26									types	
WL/PCC		20										
Brom et al., 2017												
SE/non-TF-PIs (15 sessions, 60 min.)	U,	32	100	CAPS	Israel	40·51 (13·05)	n.a.	Individual	Compl.	46	Various	7
WL/PCC	n.r.	28								57	types	
Bryant et al., 2003												
IE/TF-CBT (8 sessions, 90 min.)	S	20	100	CAPS	Australia	37·05 (12·31)	6	Individual	ITT	52	Nonsexual	6
SC/ACC (8 sessions, 90 min.)		18				36·28 (8·41)		Individual		52	assault or motor vehicle accident	

Bryant et al., 2011												
CBT/TF-CBT (8 sessions, 60 min.)	U,	16	100	PSS-I	Thailand	42·30 (6·30)	3	Individual	ITT	100	Terror	5
TAU/ACC (8 sessions, n.r.)	n.r.	12				43·9 (11·9)		Individual		91		
Bryant et al., 2019												
CBT long/TF-CBT (12 sessions, 90 min.)	M+,	33	100	CAPS	Australia	44·7 (10·7)	n.a.	Individual	Compl.	12	Various	4
WL/PCC	n.r.	34				43·4 (7·8)				29	types	
Buhmann et al., 2016												
TF-CBT/TF-CBT (16 sessions, n.r.)	M+,	52	100	HTQ	Denmark	46·00 (8·00)	n.a.	Individual	ITT	42	Mass	7
WL/PCC	n.r.	48			(refugees)	47·00 (8·00)				39	conflict	
Butollo et al., 2016												
DET/other-TF-PIs (24 sessions, n.r.)	U,	74	100	PDS	Germany	37·99 (12·10)	6	Individual	ITT	65	Various	7
CPT/TF-CBT (24 sessions, n.r.)	n.r.	67				33·67 (10·30)		Individual		68	types	
Capezzani et al., 2013												
EMDR/EMDR (8 sessions, n.r.)	S	21	100	IES-R	Italy	50·82 (7·64)	n.a.	Individual	ITT	91	Cancer	4
CBT/TF-CBT (8 sessions, n.r.)		11				52·70 (8·68)		Individual				
Carletto et al., 2016												
EMDR/EMDR (10 sessions, 60 min.)	S	20	100	CAPS	Italy	39·52 (11·68)	n.a.	Individual	Compl.	75	MS	6
RT/ACC (n.r.)		22				40·66 (10·03)				86		
Carlson et al., 1998												
EMDR/EMDR (12 sessions, 60-75 min.)	M+,	10	100	M-PTSD	USA	52·70 (8·60)	n.a.	Individual	Compl.	0	Combat	4
TAU/ACC (n.r.)	n.r.	12				46·90 (4·00)		Individual		0		
Carlsson et al., 2018												
CR/TF-CBT (16 sessions, 45-60 min.)	M+,	64	100	HTQ	Denmark	43·30 (9·50)	n.a.	Individual	ITT	44	Various	7
SIT/ACC (16 sessions, 45-60 min.)	n.r.	62			(refugees)						types	
Carter et al., 2013												
SKY/non-TF-PIs (5 sessions, 22 hours total)	M+,	14	100	CAPS	Australia	58·50 (3·80)	n.a.	Group	Compl.	0	Combat	5
WL/PCC	n.r.	11				58·40 (4·80)						

Castillo et al., 2016												
CBT/TF-CBT (16 sessions, 90 min.)	M+,	42	100	CAPS	USA	35·90 (11·00)	n.a.	Group	ITT	100	Various	6
WL/PCC	n.r.	42									types	
Chard, 2005												
CPT/TF-CBT (17 sessions à 90 min. group +	M+,	28	100	CAPS	USA	32·77 (8·87)	n.a.	Combinatio	Compl.	100	Childhood	6
10 sessions à 60 min. individual)	n.r.							n			sexual	
MA/PCC (17 phone-calls à 5-10 min.)		27						Individual			abuse	
Classen et al., 2020												
TBG/non-TF-PIs (20 sessions, n.r.)	M+,	14	87.50	PCL	Canada	43·51 (10·01)	6	Group	Compl.	100	Childhood	1
WL/PCC	n.r.	18									sexual	
											and/or	
											physical	
											abuse	
Cloitre et al., 2002												
STAIR/TF-CBT (16 sessions, 8 à 60 min. + 8	M+,	31	100	CAPS	USA	34·00 (7·22)	n.a.	Individual	Compl.	100	Childhood	5
à 90 min.)	n.r.										sexual	
WL/PCC		27									and/or	
											physical	
											abuse	
Cloitre et al., 2010												
STAIR/TF-CBT (16 sessions, 90 min.)	M+,	33	100	CAPS	USA	33·20 (n·r·)	6	Individual	ITT	100	Childhood	8
Skills comparator/ACC (n.r.)	6.57	38				37·10 (n·r·)		Individual			sexual	
											and/or	
											physical	
											abuse	

Cottraux et al., 2008												
CBT/TF-CBT (10-16 sessions, 60-120 min.)	U,	27	100	PCL	France	43·18 (10·60)	n.a.	Individual	Compl.	70	Various	6
ST/non-TF-PIs (16 sessions, 60 min.)	n.r.	15				37·20 (9·20)		Individual			types	
Davis et al., 2020												
HYP/non-TF-PIs (16 sessions, 90 min.)	M+,	70	100	CAPS	USA	49·9 (12·6)	7	Group	Compl.	34	Various	6
WLP/ACC (16 sessions, 90 min.)	n.r.	70				51·2 (13·3)		Group			types	
Devilly et al., 1998												
EMDR/EMDR (2 sessions, 90 min.)	M+,	12	100	M-PTSD	Australia	50·10 (6·48)	n.a.	Individual	Compl.	0	Combat	3
TAU/ACC (n.r.)	n.r.	10						n.r.				
Devilly et al., 1999												
EMDR/EMDR (8 sessions, 90-165 min.)	U,	11	100	PTSD-I	Australia	37·96 (12·82)	n.a.	Individual	Compl.	73	Various	4
TTP/TF-CBT (9 sessions, 90-165 min.)	n.r.	12						Individual		58	types	
Dorrepaal et al., 2012												
SGT-ComplexPTSD/other-TF-PIs (20 sessions, 120 min.)	M+, n.r.	38	100	DTS	NL	40·30 (10·70)	n.a.	Group	ITT	n.r.	Childhood sexual	6
TAU/ACC (n.r.)		33				37·10 (10·30)		Individual			and/or physical abuse	
Duffy et al., 2007												
CBT/TF-CBT (12 sessions, n.r.)	M,	29	100	PDS	Northern	44·1 (11·3)	n.a.	Individual	ITT	34	Terror	7
WL/PCC	n.r.	29			Ireland	43·7 (12·3)				45		
Dunne et al., 2012												
CBT/TF-CBT (10 sessions, 60 min.)	S	13	100	PDS	Australia	32·54 (7·09)	n.a.	Individual	ITT	50	Chronic	4
WL/PCC		13									whiplash	
Echeburua et al., 1997				Global								
EXP + CR/TF-CBT (6 sessions, 7h total)	U,	10	100	Scale of	Spain	20·00 (7·09)	12	Individual	ITT	100	Sexual	3
PMR/ACC (6 sessions, 4,15h total)	n.r.	10		PTSD				Individual			assault	

Ehlers et al., 2003												
CT/TF-CBT (12 sessions, 60-90min.)	S	28	100	PDS	UK	n·r·	9	Individual	ITT	n.r.	Motor	7
Self-help booklet/ACC (1 session, 40min.)		28						Individual		n.r.	vehicle	
WL/PCC		29								n.r.	accident	
Ehlers et al., 2005												
CT/TF-CBT (12 sessions, 60-90 min.)	M,	14	100	PDS	UK	35·4 (10·9)	n.a.	Individual	ITT	57	Various	6
WL/PCC	n.r.	14				37·8 (11·2)		Individual		50	types	
Ehlers et al., 2014												
Standard CT/TF-CBT (12 sessions, 20h total)	M, n.r.	31 30	100	CAPS	UK	41·50 (11·70) 37·80 (9·90)	6	Individual Individual	ITT	58 57	Various types	8
EFST/non-TF-PIs (12 sessions, 20h total)		30				36·80 (10·50)				60		
WL/PCC												
Ehlers et al., 2023 (preprint)												
iCBT/TF-CBT (internet-based, varied)	M,	92	100	CAPS	UK	36·25 (12·21)	3.25	Individual	ITT	74	Various	8
iStress PTSD/non-TF-PI (internet-based, varied)	n.r.	93 32				35·80 (11·46) 38·32 (13·79)		Individual		73 69	types	
WL/PCC												
Engel et al., 2015												
DESTRESS-PC/i-non-TF-PIs (18 sessions, 15-30 min. + 30 min. homework)	M+, n.r.	29	100	PCL	USA	36·20 (7·75)	2	Individual	Compl.	21	Combat and	7
TAU/ACC (3 sessions, 15 min.)		29				36·70 (9·75)				16	military sexual trauma	
Ertl et al., 2011												
NET/TF-CBT (8 sessions, 90-120 min.)	M+,	26[b]	100	CAPS	Uganda	18·66 (3·77)	12	Individual	Compl.	55	Various	6
SC/ACC (8 sessions, 90-120 min.)	n.r.	24[b]				18·32 (4·30)		Individual		68	types	
WL/PCC		28[b]				18·07 (3·55)				43	including	

											childhood soldier victimization	
Falsetti et al., 2008												
TF-CBT/TF-CBT (12 sessions, 90 min.)	M+,	22	100	MPSS	USA	35·00 (9·82)	n.a.	Group	ITT	100	Various	7
WL/PCC	6.00	31								100	types	
Fecteau et al., 1999												
CBT/TF-CBT (4 sessions, 90-180 min.)	S	10	100	CAPS	Canada	41·30 (25–63)	n.a.	Individual	Compl.	70	Motor vehicle accident	6
WL/PCC		10								70		
Foa et al., 1991												
PE/TF-CBT (9 sessions, 90 min.)	S	10	100	SI-PTSD	USA	32·70 (7·30)	n.a.	Individual	Compl.	100	Sexual assault	5
SC/ACC (9 sessions, 90 min.)		11				34·20 (9·80)		Individual				
WL/PCC		10				32·00 (9·60)						
Foa et al., 1999												
PE/TF-CBT (9 sessions, 2x120+7x90 min.)	M,	23	100	PSS-I	USA	34·90 (10·60)	12	Individual	Compl.	100	Sexual or non-sexual assault	5
SIT/ACC (9 sessions, 2x120+7x90 min.)	n.r.	19						Individual				
WL/PCC		15										
Foa et al., 2005												
PE/TF-CBT (12 sessions, 90-120 min.)	M+,	79	100	PSS-I	USA	31·30 (9·89)	n.a.	Individual	ITT	100	Sexual or non-sexual assault	7
WL/PCC	n.r.	26										
Foa et al., 2018												
spaced PE/TF-CBT (10 sessions, 90 min.)	M+,	109	100	PSS-I	USA	32·89 (7·05)	6	Individual	ITT	9	Combat	8
PCT/non-TF-PIs (10 sessions, 90 min.)	n.r.	107				32·54 (7·45)		Individual		15		
MA/PCC (4 sessions, 10-15 min.)		40				32·70 (7·68)				5		

Fonzo et al., 2017												
PE/TF-CBT (9-12 sessions, 90 min.)	U,	36	100	CAPS	USA	34·42 (10·23)	n.a.	Individual	ITT	65	Various	6
WL/PCC	n.r.	30				39·03 (10·35)					types	
Forbes et al., 2012												
CPT/TF-CBT (12 sessions, 60 min.)	M+,	30	100	CAPS	Australia	53·13 (13·97)	3	Individual	ITT	7	Combat	7
TAU/ACC (n.r.)	n.r.	29				53·62 (13·33)		Individual		0		
Ford et al., 2011												
TARGET/other-TF-PIs (12 sessions, 50min.)	U,	48	80	CAPS	USA	30·70 (6·90)	n.a.	Individual	ITT	100	Various	6
PCT/non-TF-PIs (12 sessions, n.r.)	n.r.	53	74					Individual		100	types	
WL/PCC		45	87							100		
Ford et al., 2013												
TARGET/other-TF-PIs (12 sessions, 75min.)	M,	38	82	CAPS	USA	34·60 (8·60)	n.a.	Individual	Compl.	100	Various	6
SGT/non-TF-PIs (12 sessions, 75 min.)	n.r.	34	74			38·00 (7·80)		Group		100	types	
Galovski et al., 2012												
MCPT/TF-CBT (4-18 sessions, n.r.)	M,	38	100	CAPS	USA	39·80 (11·74)	n.a.	Individual	ITT	69	Sexual or	8
SMDT/PCC (n.r.)	n.r.	37									physical assault	
Gersons et al., 2000												
BEP/other-TF-PIs (16 sessions, 60 min.)	M+,	22	100	SI-PTSD	NL	35·00 (6·00)	3	Individual	ITT	18	Various	7
WL/PCC	n.r.	20				38·00 (7·00)				5	types	
Ghafoori et al., 2017												
PE/TF-CBT (12 sessions, 60-90 min.)	M,	47	100	PCL-5	USA	35·10 (12·80)	n.a.	Individual	ITT	83	Physical	6
PCT/non-TF-PIs (12 sessions, 60-90 min.)	n.r.	24				35·30 (10·40)		Individual		83	assault and other types	
Goldstein et al., 2017												
IN EXC/non-TF-PIs (36 sessions, 60 min.)	M+,	21	89.36	CAPS	USA	46·80 (14·93)	n.a.	Group	ITT	19	Combat	4
WL/PCC	n.r.	26										

Gray et al., 2019												
RTM/TF-CBT (3 sessions, 120 min.)	M+,	37	100	PSS-I	USA	48·60 (13·30)	n.a.	Individual	ITT	0	Combat and other types	7
WL/PCC	n.r.	37										
Gray et al., 2021												
RTM/TF-CBT (3 sessions, ≤120 min.)	M+,	15	100	PSS-I	USA	n·r·	n.a.	Individual	ITT	100	Various types	6
WL/PCC	n.r.	15				n·r·						
Heffner et al., 2016 – Texas subsample only												
Mantram/non-TF-PIs (8sessions, 60 min.)	M+,	18	82	CAPS	USA	n·r·	n.a.	Individual	Compl.	n.r.	Combat	1
PSY-EDU/ACC (10 sessions, 90 min.)	n.r.	15						Group				
Hensel-Dittmann et al., 2011												
NET/TF-CBT (10 sessions, 90 min.)	M+,	11	100	CAPS	Germany	n·r·	6	Individual	Compl.	n.r.	Various types	6
SIT/ACC (10 sessions, 90 min.)	n.r.	10						Individual				
Hinton et al., 2011												
CA-CBT/non-TF-PIs (14 sessions, 60 min.)	U,	12	100	PCL	USA (Cambod. refugees)	47·60 (8·20)	3	Group	ITT	100	n.r.	5
AMR/ACC (14 sessions, 60 min.)	n.r.	12				51·40 (5·90)		Group				
Hollifield et al., 2007												
CBT/TF-CBT (12 sessions, 120 min.)	M,	25	100	PSS-SR	USA	40·90 (13·40)	3	Group	ITT	79	Various types	5
WL/PCC	n.r.	24				43·40 (13·50)				63		
Ivarsson et al., 2014												
I-CBT/iTF-CBT (8 sessions, 28 min. of contact to therapists on average)	U, n.r.	31	100	IES-R	Sweden	44·80 (11·20)	n.a.	Individual	ITT	77	Various types	8
SC/ACC (n.r.)		31				47·20 (12·20)				87		

Jacob et al., 2014 **NET/TF-CBT (8 sessions, 90-150 min.)** **WL/PCC**	M+, n.r.	38 (17 orpha ns) 38 (16 orpha ns)	100	CAPS	Rwanda	widows 48·29 (13·40) orphans 25·06 (4·31) widows 46·86 (11·73) orphans 24·00 (4·40)	n.a.	Individual	ITT	89 95	Various types	8
Jalal et al., 2020 **CA-CBT/non-TF-PIs (14 sessions, 60 min.)** **AMR/ACC (14 sessions, 60 min.)**	U, n.r.	10 10	100	PCL-C	South Africa	28·2 (15 - n·r·)	n.a.	Individual	Compl.	75	Various types	3
Jensen, 1994 **EMDR/EMDR (3 sessions, n.r.)** **TAU/ACC (n.r.)**	M+, n.r.	13 12	100	SI-PTSD	USA	43·10 (2·84)	n.a.	Individual Individual	Compl.	0 0	Combat	3
Johnson et al., 2011 **HOPE/TF-CBT (12 sessions, 60-90 min.)** **TAU/ACC (n.r.)**	M+, 7.31	34 34	88.60 85.70	CAPS	USA	32·55 (8·00)	6	Individual Group	Compl.	100	IPV	5
Johnson et al., 2016 **HOPE/TF-CBT (16 sessions, 60 min.)** **TAU/ACC (n.r.)**	M+, 3.57	26 25	93.30 96.70	CAPS	USA	33·30 (10·48) 33·20 (10·39)	6	Individual Group	Compl.	100	IPV and other types	6 (Post + FU1) 5 (FU2)

Johnson et al., 2020												
HOPE/TF-CBT (16 sessions, 50– 60 min.)	M+,	83	100	CAPS	USA	34·34 (9·46)	12	Individual	Compl.	100	IPV	6
PCT+/non-TF-PIs (16 sessions, 50– 60 min.)	n.r.	89				35·87 (8·78)		Individual				
Karatzias et al., 2011												
EMDR/EMDR (8 sessions, 60 min.)	S	23	100	CAPS	UK	41·5 (10·8)	3	Individual	ITT	61	Various	7
EFT/non-TF-PIs (8 sessions, 60 min.)		23				39·7 (10·9)		Individual		52	types	
Keane et al., 1989												
IT/TF-CBT (14 sessions, 90 min.)	M+,	11	100	MMPI	USA	34·70 (4·30)	n.a.	Individual	Compl.	0	Combat	2
WL/PCC	n.r.	13		PTSD		34·50 (2·10)				0		
Kearney et al., 2021												
CPT-C/TF-CBT (12 sessions, 90 min.)	M+,	93	100	CAPS	USA	56·1 (13·7)	6	Group	ITT	16	Various	8
LKM/non-TF-PIs (12 sessions, 90 min.)	n.r.	90				58·2 (12·5)		Group			types	
Kelly et al., 2021												
CPT/TF-CBT (12 sessions, 90 min.)	M+,	18	100	CAPS	USA	48·38 (11·1)	3	Group	Compl.	100	Military	5
Trauma-Sensitive Yoga/non-TF-PIs (10	n.r.	37						Group			sexual	(Post)
sessions, 60 min.)											trauma	4 (FU)
Kent et al., 2011												
ROT/non-TF-PIs (12 sessions, 90 min.)	M+,	23	100	PDS	USA	54·00 (8·34)	n.a.	Group	ITT	33	Various	4
WL/PCC	n.r.	19									types	
Krakow et al., 2000												
IRT/other-TF-PIs (3 sessions, 2x 180+1x 60	M,	42	95	PSS-SR	USA	Compl·	n.a.	Group	Compl.	100	Sexual	3
min.)	n.r.	48	95			40·10 (11·30)					assault and	
WL/PCC						36·00 (9·80)					other types	
Krakow et al., 2001												
IRT/other-TF-PIs (3 sessions, 2x 180+1x 60	M,	45	95	CAPS	USA	Compl·	n.a.	Group	Compl.	100	Sexual	4
min.)	n.r.	52	95			40·00 (11·20)					assault and	
WL/PCC						36·00 (9·30)					other types	

Krupnick et al., 2008												
IPT/non-TF-PIs (16 sessions, 120 min.)	M+,	32	100	CAPS	USA	32·00 (10·20)	4	Group	ITT	100	Various	5
WL/PCC	n.r.	16									types	
Kubany et al., 2003												
CTT-BW/TF-CBT (8-11 sessions, 90 min.)	M+,	19	100	CAPS	USA	Compl·	n.a.	Individual	ITT	100	IPV and	5
WL/PCC	n.r.	18				36·80 (9·50)					other types	
Kubany et al., 2004												
CTT-BW/TF-CBT (8-11 sessions, 90 min.)	M+,	63	100	CAPS	USA	42·20 (10·10)	n.a.	Individual	ITT	100	IPV and	7
WL/PCC	n.r.	62								100	other types	
Lang et al., 2019												
CM/non-TF-PIs (10 sessions, 90 min.)	M+,	14	100	CAPS	USA	49·10 (14·50)	n.a.	Group	Compl.	25	Combat	5
VC/ACC (10 sessions, 90 min.)	10.30	14						Group				
Langkaas et al., 2017												
PE/TF-CBT (10 sessions, 90-120 min.)	M,	34	100	PSS-I	Norway	45·20 (9·70)	12	Individual	ITT	58	Various	8
IR/other-TF-PIs (10 sessions, 90-120 min.)	n.r.	31						Individual			types	
Latif et al., 2021												
CatCBT GSH/non-TF-PIs (9 sessions, n.r.)	M+,	25	100	IES-R	Pakistan	27·4 (4·6)	n.a.	Individual	ITT	100	Domestic	7
WL/PCC	n.r.	25				26·3 (3·7)					violence	
Laugharne et al., 2016												
PE/TF-CBT (12 sessions, n.r.)	M,	10	100	CAPS	Australia	40·10 (9·90)	n.a.	Individual	ITT	70	Various	7
EMDR/EMDR (12 sessions, n.r.)	n.r.	10						Individual			types	
Lee et al., 2002												
EMDR/EMDR (7 sessions, 90 min.)	M,	12	100	SI-PTSD	Australia	35·30 (n·r·)	3	Individual	Compl.	46	Various	4
PE + SIT/TF-CBT (7 sessions, 90 min.)	n.r.	12						Individual		46	types	

Lehavot et al., 2021												
DESTRESS-WV/iTF-CBT (16 sessions, n.r.)	M+,	51	100	PCL-5	USA	49·9 (11·3)	6	Individual	ITT	100	Various	7
Phone monitoring/ACC (9 sessions, 15min.)	n.r.	51				48·9 (12·2)					types	
Lely et al., 2019												
NET/TF-CBT (11 sessions, 90 min.)	M+,	18	100	CAPS	NL	62·65 (5·89)	4	Individual	ITT	28	Various	7
PCT/non-TF-PIs (11 sessions, 90 min.)	n.r.	15				62·47 (6·24)		Individual		27	types	
Lewis et al., 2017												
I-CBT/iTF-CBT (n.r.)	S	21	100	CAPS	UK	39·29 (12·70)	3	Individual	ITT	60	Various	7
WL/PCC		21									types	
Lindauer et al., 2005												
BEP/other-TF-PIs (16 sessions, 45-60 min.)	M,	12	100	SI-PTSD	NL	37·60 (10·20)	n.a.	Individual	ITT	42	Various	7
WL/PCC	4.70	12				40·30 (8·90)				67	types	
Littleton et al., 2016												
FSTTP/i-non-TF-PIs (n.r.)	M,	23	100	PSS-I	USA	22 (18-42)	3	Individual	Compl.	100	Rape and	6
PESHW/ACC (n.r.)	n.r.	28						Individual			other IPV	(Post) 5 (FU1)
Litz et al., 2007												
I-CBT/iTF-CBT (n.r.)	U,	14	100	PSS-I	USA	39·86 (7·72)	3	Individual	Compl.	19	Combat or	5
I-SC/iACC (n.r.)	n.r.	17				38·63 (9·41)				25	terror	
Litz et al., 2021												
CPT-C/TF-CBT (12 sessions, 60 min.)	M+,	33	100	CAPS	USA	30·30 (6·43)	n.a.	Individual	Compl.	8	Combat	6
AD/non-TF-PIs (6-8 sessions, 90 min.)	n.r.	37				29·80 (6·39)		Individual				
Maguen et al., 2017												
IOK/TF-CBT (6-8 sessions, 60-90min.)	M+,	15	n.r.	PCL-M	USA	61·20 (13·00)	n.a.	Individual	Compl.	0	Combat	4
TAU/ACC (n.r.)	n.r.	15						Individual		0		

Marcus et al., 1997												
EMDR/EMDR (8 sessions, 50 min.)	U,	33	100	MPSS	USA	Women 39·98	n.a.	Individual	Compl.	79	Various	6
TAU/ACC (n.r., individual therapy: 50	n.r.	33				(18·00-73·00)		Combinatio		79	types	
min., group therapy: 90 min.)						Men 44·78		n				
						(23·00-67·00)						
Markowitz et al., 2015												
PE/TF-CBT (10 sessions, 90 min.)	M,	38	100	CAPS	USA	47·50 (10·60)	3	Individual	ITT	55	Various	7
IPT/non-TF-PIs (14 sessions, 50 min.)	n.r.	40				41·00 (9·10)		Individual		70	types	
RT/ACC (10 sessions, 90 min.)		32				34·80 (5·10)		Individual		88		
Marks et al., 1998												
EXP/TF-CBT (10 sessions, 90 min.)	U,	20	100	CAPS	UK	39·00 (11·00)	3	Individual	Compl.	39	Various	4
RT/ACC (10 sessions, 90 min.)	n.r.	18				36·00 (10·00)		Individual		48	types	
McDonagh et al., 2005												
CBT/TF-CBT (14 sessions, 7x120+7x90min.)	M,	29	100	CAPS	USA	39·80 (9·90)	6	Individual	ITT	100	Childhood	6
PCT/non-TF-PIs (14 sessions,	n.r.	22				39·60 (9·60)		Individual			sexual	
7x120+7x90 min.)		23				42·00 (9·80)					abuse	
WL/PCC												
McGuire Stanbury et al., 2020												
PE/TF-CBT (12 sessions, 90 min.)	M,	10	100	CAPS	Australia	44·60 (12·18)	3	Individual	Compl.	n.r.	Various	5
EMDR/EMDR (12 sessions, 90 min.)	n.r.	10				39·70 (9·55)		Individual			types	
McLean et al., 2020												
Web-PE/TF-CBT (10 sessions, 60 min.)	M+,	10[b]	100	PCL-5	USA	38·7 (8·9)	3	Individual	Compl.	25	Combat	5
PCT/non-TF-PIs (10 sessions, 60 min.)	n.r.	11[b]				41·5 (6·5)						
Mitchell et al., 2014												
YI/non-TF-PIs (12 sessions, 75 min.)	M,	20	71	PCL	USA	44·37	1	Group	ITT	100	Various	5
WL/PCC	n.r.	18	71			(12·37)				100	types	

Monson et al., 2006												
CPT/TF-CBT (12 sessions, n.r.)	M+,	30	100	CAPS	USA	54·00 (6·30)	1	Individual	ITT	7	Combat	7
WL/PCC	n.r.	30								13		
Monson et al., 2012												
CBCT/TF-CBT (15 sessions, n.r.)	U,	20	100	CAPS	USA &	40·40 (11·30)	n.a.	Couple	ITT	65	Various	7
WL/PCC	n.r.	20			Canada	33·80 (10·50)				85	types	
Morath et al., 2014												
NET/TF-CBT (12 sessions, n.r.)	M+,	19	100	CAPS	Germany	28·70 (9·54)	n.a.	Individual	Compl.	32	Various	6
WL/PCC	8.05	19				30·10 (8·21)				32	types	
Morland et al., 2022												
CBCT/TF-CBT (8 sessions, 75 min.)	M+,	46	100	CAPS	USA	39·30	6	Individual	ITT	26	Combat	7
PFE/ACC	n.r.	45				43·90				18		
Mueser et al., 2008												
CBT/TF-CBT (16 sessions, n.r.)	M,	32	100	CAPS	USA	45·13 (9·83)	6	Individual	Compl.	76	Various	5
TAU/ACC(n.r.)	n.r.	27				43·30 (11·41)		Individual		82	types	
Nacasch et al., 2011												
PE/TF-CBT (9-15 sessions, 90-120 min.)	M+,	15	100	PSS-I	Israel	34·80 (11·40)	12	Individual	ITT	n.r.	Combat	7
TAU/ACC (n.r., 60 min.)	n.r.	15				33·70 (11·90)		Individual			and terror	
NCT00607815 (unpublished trial, ended 2016)	M+,	43	100	CAPS	USA	29·50 (7·11)	12	Individual	ITT	0	Combat	5
CPT/TF-CBT (12 sessions, n.r.)	n.r.	36				32·11 (7·85)		Individual		0		
PCT/non-TF-PIs (12 sessions, n.r.)												
Neuner et al., 2004												
NET/TF-CBT (4 sessions, 90-120 min.)	M+,	17	100	PDS	Uganda	31·90 (6·70)	12	Individual	Compl.	53	Various	6
SC/ACC (4 sessions, 90-120 min.)	n.r.	14			(Sundanese	33·80 (7·90)		Individual		57	types	
PSY-EDU/PCC (1 session, n.r.)		12			refugees)	34·20 (6·90)		Individual		75		

Neuner et al., 2008												
NET/TF-CBT (6 sessions, n.r.)	M+,	111	100	PDS	Uganda	34·40 (12·20)	9	Individual	ITT	51	Various	7
TC/ACC (6 sessions, n.r.)	n.r.	111			(Rwandan	35·20 (12·80)		Individual		53	types	
WL/PCC		55			& Somal.	35·60 (14·00)				49		
					refugees)							
Neuner et al., 2010												
NET/TF-CBT (5-17 sessions, 120 min.)	M+,	14[b]	100	PDS	Germany	31·10 (7·80)	6	Individual	ITT	31	Physical	7
TAU/ACC (n.r.)	n.r.	16[b]			(refugees)	31·60 (7·70)		Individual		31	torture and other types	
Nidich et al., 2018												
PE/TF-CBT (12 sessions, 90 min.)	M+,	68	100	CAPS	USA	48·50 (15·60)	n.a.	Individual	ITT	18	Combat	7
TMed/non-TF-PIs (12 sessions, 90 min.)	n.r.	68				46·40 (14·30)		Individual		18		
HE/ACC (12 sessions, 90 min.)		66				46·20 (16·40)		Individual		15		
Nijdam et al., 2012												
EMDR/EMDR (17 sessions, 90 min.)	M,	70	100	SI-PTSD	NL	38·30 (12·20)	n.a.	Individual	Compl.	51	Assault and	7
BEP/other-TF-PIs (16 sessions, 45-60 min.)	n.r.	70				37·30 (10·60)		Individual		61	other types	
Niles et al., 2012												
teleMM/i-non-TF-PIs (8 sessions; 2 f2f à 45	M+,	13	100	CAPS	USA	52·00 (13·00)	1.50	Individual	Compl.	0	Combat or	5
min., 6 tele à 20 min.)	n.r.			(post)							mass	
telePSY-EDU/ACC (8 sessions; 2 f2f à 45		14		PCL				Individual			violence (as	
min., 6 tele à 20 min.)				(FU)							peacekeepe	
											rs)	
Orang et al., 2018												
NET/TF-CBT (12 sessions, 120-150 min.)	M+,	17[b]	100	PSS-I	Iran	38·04 (9·69)	6	Individual	Compl.	100	IPV	5
TAU/ACC (12 sessions, 90–120 min.)	n.r.	17[b]				37·28 (7·92)		Combinat.				

Pacella et al., 2012 **PE/TF-CBT (10 sessions, 90-120 min.)** **WL/PCC**	M, n.r.	34 24	100	PSS-I	USA	46·00 (5·80) 48·00 (7·00)	3	Individual	ITT	37	HIV-related and others	8
Paunovic, 2011 **EIT/TF-CBT (3-9 sessions, 60-120 min.)** **WL/PCC**	M, n.r.	14 15	100	CAPS	Sweden	37·10 (13·80) 37·30 (10·20)	n.a.	Individual	Compl.	50 47	Sexual assault and other types	2
Power et al., 2002 **EXP + CR/TF-CBT (10 sessions, 90 min.)** **EMDR/EMDR (10 sessions, 90 min.)** **WL/PCC**	S	21 27 24	100	SI-PTSD	UK	43·20 (11·00) 38·60 (11·80) 36·50 (11·60)	n.a.	Individual Individual	Compl.	38 44 42	Various types	6
Raabe et al., 2022 **IR/other-TF-PIs (16 sessions, 90 min.)** **WL**	M+, n.r.	21 20	100	CAPS	NL	35·40 (10·70) 35·50 (11·80)	n.a.	Individual	ITT	86 90	Childhood abuse (various types)	7
Rauch et al., 2015 **PE/TF-CBT (10-12 sessions, 80 min.)** **PCT/non-TF-PIs (10-12 sessions, 80 min.)**	M+, n.r.	11 15	100	CAPS	USA	31·90 (7·60)	n.a.	Individual Individual	Compl.	8	Combat	4
Ready et al., 2018 **GBET/TF-CBT (32 sessions, 240 min.)** **GPCT/non-TF-PIs (37 sessions, 90 min.)**	M+, n.r.	40 41	100	CAPS	USA	61·40 (2·60)	12	Group Group	Compl.	n.r.	Combat	5
Reger et al., 2016 **PE/TF-CBT (10 sessions, 90-120 min.)** **WL/PCC**	M+, n.r.	54 54	100	CAPS	USA	30·89 (7·09) 30·39 (6·45)	n.a.	Individual	ITT	4 2	Nonsexual assault	8

Resick et al., 2002 **CPT/TF-CBT (12 sessions, 13 hours total)** **WL/PCC**	M, n.r.	62 47	100	SI-PTSD	USA	32·00 (9·90)	n.a.	Individual	ITT	100 100	Sexual assault	6
Resick et al., 2015 **GCPT/TF-CBT (12 sessions, 90 min.)** **GPCT/non-TF-PIs (12 sessions, 90 min.)**	M+, n.r.	56 52	100	PSS-I	USA	31·80 (7·30) 32·40 (7·90)	12	Group Group	ITT	7 8	Combat and other types	6
Robjant et al., 2019 **NET/TF-CBT (6 sessions á 90-120 min. individual, 6 sessions á 90-120 group)** **TAU/ACC (n.r.)**	M+, 48.00	45[b] 43[b]	100	PSS-I	DRC	18 (16-25) 18 (16-25)	9	Combination Individual	Compl.	100	Former child soldier victimization	7
Rothbaum et al., 2005 **EMDR/EMDR (9 sessions, 90 min.)** **PE/TF-CBT (9 sessions, 90 min.)** **WL/PCC**	U, 6.00	20 20 20	100	CAPS	USA	33·80 (11·00)	6	Individual Individual	Compl.	100	Sexual assault	5
Sautter et al., 2015 **SAT/TF-CBT (12 sessions, 60 min.)** **PFE/ACC (12 sessions, 60 min.)**	M+, n.r.	29 28	100	CAPS	USA	32·55 (6·16) 33·71 (7·01)	3	Couple Couple	ITT	0 4	Combat	7
Schaal et al., 2009 **NET/TF-CBT (4 sessions, 120-150 min.)** **IPT/non-TF-PIs (4 sessions, 120-150 min.)**	M+, n.r.	12 14	100	CAPS	Rwanda	19·42 (3·59)	6	Individual Group	ITT	62	Mass conflict	7
Scheck et al., 1998 **EMDR/EMDR (2 sessions, 90 min.)** **AL/ACC (2 sessions, 90 min.)**	M+, n.r.	28 29	77	IES	USA	20·93 (16·00-25·00)	n.a.	Individual Individual	Compl.	100	Various types	5

Schnurr et al., 2003												
TFGT/TFCBT (30 sessions, 90-120 min.)	M+,	162	100	CAPS	USA	50·60 (3·70)	12	Group	Compl.	0	Combat	6
GPCT/non-TF-PIs (30 sessions, 90-120 min.)	n.r.	160				50·80 (3·80)		Group				
Schnurr et al., 2007												
PE/TF-CBT (10 sessions, 90 min.)	M+,	141	100	CAPS	USA	44·60 (9·39)	6	Individual	ITT	100	Sexual trauma and other types	7
PCT/non-TF-PIs (10 sessions, 90 min.)	n.r.	143				44·90 (9·47)		Individual				
Sloan et al., 2011												
WET/TF-CBT (3 sessions, 20 min.)	U,	21[b]	100	PSS-I	USA	18·90 (1·10)	1	Individual	Compl.	n.r.	Various types	5
Neutral Writing/PCC (3 sessions, 20 min.)	n.r.	21[b]						Individual				
Sloan et al., 2012												
WET/TF-CBT (5 sessions, 1x60+4x40 min.)	M,	22	100	CAPS	USA	40·65	3	Individual	ITT	65	Motor vehicle accident	6
WL/PCC	n.r.	24				(13·10)				65		
Sloan et al., 2018												
GCBT/TF-CBT (14 sessions, 120 min.)	M+,	98	100	CAPS	USA	54·40 (11·44)	12	Group	ITT	0	Combat and other types	8
GPCT/non-TF-PIs (14 sessions, 120 min.)	n.r.	100				57·22 (12·51)		Group				
Spence et al., 2011												
iCBT/iTF-CBT (10 sessions, 90 min.)	M,	23	100	PCL-C	Australia	43·00 (15·20)	n.a.	Individual	ITT	74	Various types	7
WL/PCC	6.30	21				42·00 (10·40)				89		
Stenmark et al., 2011												
NET/TF-CBT (10 sessions, 90 min.)	M+,	33	100	CAPS	Norway	34·50 (11·10)	6	Individual	Compl.	33	Various types	7
TAU/ACC (10 sessions, 90 min.)	n.r.	21			(refugees)	36·60 (11·00)		Individual		27		

Suris et al., 2013												
CPT/TF-CBT (12 sessions, n.r.)	M+,	52	100	CAPS	USA	44·60 (10·50)	6	Individual	Compl.	83	Military	7
PCT/non-TF-PIs (12 sessions, n.r.)	n.r.	34				48·40 (8·20)		Individual		88	sexual trauma	
Taylor et al., 2003												
PE/TF-CBT (8 sessions, 90 min.)	M,	15	100	CAPS	Canada	37·00 (10·00)	3	Individual	ITT	75	Various	6
EMDR/EMDR (8 sessions, 90 min.)	n.r.	15						Individual			types	
RT/ACC (8 sessions, 90 min.)		15						Individual				
ter Heide et al., 2016												
EMDR/EMDR (9 sessions, 3x60+6x90 min.)	M+,	32	100	CAPS	NL	43·10 (10·70)	3	Individual	Compl	17	Various	7
TAU/ACC (12 sessions, 60 min.)	n.r.	29			(refugees)	39·80 (11·90)		Individual		39	types	
Thorp et al., 2019												
PE/TF-CBT (12 sessions, 90 min.)	M+,	29	100	CAPS	USA	66·51 (6·21)	6	Individual	ITT	0	Combat	6 (Post) 5 (FU2)
RT/ACC (12 sessions, 90 min.)	n.r.	38				64·43 (4·49)		Individual				
Tylee et al., 2017												
RTM/TF-CBT (3 sessions, 120 min.)	M+,	15	100	PSS-I	USA	49·0 (19·5)	n.a.	Individual	Compl.	0	Combat	5
WL/PCC	2.60	15				42·6 (15·9)					and other types	
van den Berg et al., 2015												
EMDR/EMDR (8 sessions, 90 min.)	M,	55	100	CAPS	NL	40·40 (11·30)	6	Individual	ITT	55	Various	8
PE/TF-CBT (8 sessions, 90 min.)	n.r.	55				42·60 (10·30)		Individual		57	types	
WL/PCC		47				40·30 (9·70)				51		

van der Kolk et al., 2007												
EMDR/EMDR (8 sessions, 90 min.)	M,	29	100	CAPS	USA	38·70 (14·30)	n.a.	Individual	ITT	76	Various	8
Placebo/ACC (8 sessions, 20-30 min.)	n.r.	29				35·70 (13·40)		Individual		86	types	
van der Kolk et al., 2014												
YI/non-TF-PIs (10 sessions, 60 min.)	U,	32	100	CAPS	USA	41·50 (12·20)	n.a.	Group	ITT	100	Various	5
HE/ACC (10 sessions, 60 min.)	n.r.	32				44·30 (11·90)		Group		100	types	
van Gelderen et al., 2020												
3MDR/iEMDR (6 sessions, 70-90 min.)	M+,	22	100	CAPS	NL	42·41 (9·80)	n.a.	Individual	ITT	4.5	Various	7
NTCC/ACC	n.r.	21				41·93 (9·12)		Individual		0	types	
Vaughan et al., 1994												
EMDR/EMDR (3-5 sessions, 50 min.)	U,	12	78	SI-PTSD	Australia	32·00 (14·70)	3	Individual	Compl.	64	Various	3
IHT/TF-CBT (3-5 sessions, 50 min.)	n.r.	13						Individual			types	
AMR/ACC		11						Individual				
WL/PCC		11										
Vera et al., 2022												
PE/TF-CBT (12-15 sessions, 90 min.)	U,	39	100	CAPS	Puerto Rico	44·08 (11·53)	3	Individual	ITT	74	Various	6
AMR/ACC (12-15 sessions, 90 min.)	n.r.	37				43·16 (12·73)		Individual		90	types	
Wagner et al., 2019												
BA/non-TF-PIs (8 sessions, 45 min.)	M+,	30	100	CAPS	USA	30·2 (6·4)	3	Individual	Compl.	7	Military	6
TAU/ACC (6 sessions, n.r.)	n.r.	24				29·9 (7·1)		Combinatio n		5		
Wahbeh et al., 2016												
MM/non-TF-PIs (6 sessions, 60 min.)	M+,	24	100	PCL	Canada	53·30 (12·60)	n.a.	Individual	Compl.	7	Combat	3
SQ/PCC (6 sessions, n.r.)	n.r.	22				53·00 (11·80)		Individual		4		

Wells et al., 2012												
MCT/non-TF-PIs (8 sessions, n.r.)	U,	10	100	PDS	UK	33·40 (13·40)	n.a.	Individual	ITT	60	Various	6
WL/PCC	n.r.	10				41·30 (13·70)				50	types	
Wells et al., 2015												
MCT/non-TF-PIs (8 sessions, 60 min.)	U,	10	100	PDS	UK	40·60 (11·90)	3	Individual	Compl.	36	Various	6
PE/TF-CBT (8 sessions, 60 min.)	n.r.	10				40·50 (10·90)		Individual		36	types	
WL/PCC		10				42·70 (18·50)				40		
Yehuda et al., 2014												
PE/TF-CBT (12 sessions, 90 min.)	M+,	25	100	CAPS	UA	48,86	n.a.	Individual	Compl.	11	Combat	7
MA/PCC	n.r.	12										
Yurtsever et al., 2018												
EMDR G-TEP/EMDR (2 sessions, 240 min.)	M+,	18	100	IES-R	Turkey	39·89 (10·96)	1	Group	Compl.	72	Various	5
WL/PCC	n.r.	29			(Syrian refugees)	35·93 (11·10)				79	types	
Zang et al., 2013												
NET/TF-CBT (4 sessions, 60-90 min.)	M,	11	100	IES-R	China	56·64 (12·22)	n.a.	Individual	ITT	73	Disaster	7
WL/PCC	n.r.	11				54·82 (11·59)				82		
Zang et al., 2014												
NET/TF-CBT (4 sessions, 60-90 min.)	U,	10	100	IES-R	China	53·50 (1·24)	n.a.	Individual	ITT	90	Disaster	7
WL/PCC	n.r.	10				50·90 (1·23)				100		
Zemestani et al., 2022												
TF-CBT/TF-CBT (12 sessions, 90 min.)	M+,	24	100	PCL-5	Iraq	33·45 (5·46)	1	Individual	ITT	100	Various	7
WL/PCC	n.r.	24				32·37 (5·27)				100	types	

Zlotnick et al., 1997 **AM/Non-TF-PIs (15 sessions, 120 min.)** **TAU/ACC (n.r.)**	M, 3.71	16 17	100	DTS	USA	39·00 (9·59)	n.a.	Group Individual	Compl.	100	Childhood sexual abuse	3
Zoellner et al., 2017 **IE + Placebo/TF-CBT (5 sessions, 50 min.)** **WL/PCC**	U, n.r.	16 11	100	PSS-I	USA	37·50 (12·40)	1	Individual	ITT	71	Various types	6

ACC = Active Control Condition; AD = Adaptive Disclosure; AL = Active Listening; AM = Affect-Management; AMR = Applied Muscle Relaxation; BA = Behavioral Activation; BEP = Brief Elective Psychotherapy; CA-CBT = Culturally Adapted Cognitive Behavioral Therapy; CAPS = Clinician-Administered PTSD Scale; CatCBT GSH = culturally adapted CBT-based guided self-help; CBCT = Cognitive-Behavior Couple Therapy; CBT = Cognitive-Behavioral Therapy; CM = Compassion Meditation; Compl. = Completer analysis; CPT = Cognitive-Processing Therapy; CR = Cognitive Restructuring; CPT-C = Cognitive-Processing Therapy (cognitive only); CT = Cognitive Therapy; CTT-BW = Cognitive Trauma-Therapy for Battered Women; DBT-PTSD = Dialectic Behavior Therapy for PTSD; DESTRESS-PC = Delivery of Self Training and Education for Stressful Situations-Primary Care version; DESTRESS-WV = Delivery of Self Training and Education for Stressful Situations = Women Veterans version; DET = Dialogical Exposure Therapy; DRC = Democratic Republic of the Congo; DTS = Davidson Trauma Scale; EFST = Emotion Focused Supportive Therapy; EFT = Emotional Freedom Techniques; EIT = Exposure Inhibition Therapy; EMDR = Eye Movement Desensitization and Reprocessing; EMDR G-TEP = EMDR Group Traumatic Episodic Protocol; EXP = Exposure; EXP + CR = Exposure plus Cognitive Restructuring; f2f = face to face; FSTTP = From Survivor to Thriver Program; GBET = Group-Based Exposure Therapy; GCBT = Group Cognitive Behavioral Therapy; GCPT = Group Cognitive-Processing Therapy; GPCT = Group Present-Centered Therapy; HE = Health Education; HOPE = Helping to Overcome PTSD through Empowerment; HTQ = Harvard Trauma Questionnaire; HYP = Holistic Yoga Program; I-CBT = Internet-based Cognitive Behavioral Therapy; IE = Imaginal Exposure; iEMDR = internet-delivered/technology-delivered Eye Movement Desensitization and Reprocessing; IE + Placebo = Imaginal Exposure plus pill placebo; IES = Impact of Event Scale; IES-R = Impact of Event Scale - Revised; IHT = Image Habituation Training; IN EXC = Integrative Exercise; i-non-TF-PIs = internet-delivered/technology-delivered non-trauma focused psychological interventions; IOK = Impact Of Killing; IPT = Inter-Personal Therapy; IPV = Intimate Partner Violence; IR = Imagery Rescripting; IRT = Imagery Rehearsal Therapy; I-SC = Internet-based Supportive Counseling; IT = Implosive Therapy; iTF-CBT = (mainly or completely) internet-delivered/technology-delivered Trauma-Focused Cognitive Behavioral Therapy; ITT = Intent-To-Treat analysis; LKM = Loving-Kindness Meditation; MA = Minimal Attention; MCPT = Modified Cognitive-Processing Therapy; MCT = Meta-Cognitive Therapy; min. = minutes; MM = Mindfulness Meditation; MMPI = Minnesota Multiphasic Personality Inventory; MPSS = Modified PTSD Symptom Scale; M-PTSD = Mississippi scale for combat-related PTSD; MS = Multiple Sclerosis; n.a. = not applicable; NET = Narrative Exposure Therapy; NET-R = Narrative Exposure Therapy Revised; NL = the Netherlands; non-TF-PIs = non-trauma focused psychological interventions; n.r. = not reported; NTCC = Non-specific Treatment Component Control; other-TF-PIs = other trauma focused psychological interventions (i.e.; non-TF-CBT & non-EMDR interventions); PCC = Passive Control Condition; PCL-5 = PTSD Checklist for DSM-5; PCL = PTSD Check-List = Civilian Version; PCL-C = PTSD Check-List - Civilian Version; PCL-M = PTSD Check-List - Military Version; PCT = Present-Centered Therapy; PCT+ = adapted version of Present-Centered Therapy; PDS = Posttraumatic Diagnostic Scale; PE = Prolonged Exposure; PE + CR = Prolonged Exposure + Cognitive Restructuring; PE + SIT = Prolonged Exposure plus Stress Inoculation Training; PESHW = Psycho-educational self-help website; PFE = PTSD Family Education; Placebo = pill placebo control group; PMR = Progressive Muscle Relaxation; PSS-I = PTSD Symptom Scale = Interview; PSS-SR = PTSD Symptom Scale = Self-Report; PSY-EDU = Psychoeducation; PTSD-I = PTSD Interview; ROT = Resilience Oriented Treatment; RT = Relaxation Therapy/Training; RTM = Reconsolidation of Traumatic Memories; SAT = Structured Approach Therapy; SC = Supportive Counselling; SE = Somatic Experiencing; SGT = Supportive Group Therapy; SGT-ComplexPTSD = Stabilizing Group Treatment for Complex PTSD; SI-PTSD = Structured Interview for PTSD; SIT = Stress Inoculation Training; SKY = Sudarshan Kriya Yoga; SMDT = Symptom-Monitoring Delayed Treatment group; SPT = Supportive Psychotherapy; SQ = Sitting Quietly; SSBT = Single-Session Behavioral Treatment; STAIR = Skills Training in Affective and Interpersonal Regulation; TARGET = Trauma Affect Regulation Guide for Education and Therapy; TAU = Treatment-As-Usual; TBG = Trauma and the Body Group; TC = Trauma Counselling; teleMM = telehealth Mindfulness Meditation; telePSY-EDU = telehealth Psychoeducation; TF-CBT = Trauma-Focused Cognitive Behavioral Therapy; TFGT = Trauma-Focused Group Psychotherapy; TMed = Transcendental Meditation; TTP = Trauma Treatment Protocol; UK = United Kingdom; USA = United States of America; VC = Veteran.Calm; WL = Wait-List control condition; WLP = Wellness Lifestyle Program; YI = Yoga Intervention.

[a]S = single trauma trials (i.e., 100% of participants had single-event-related PTSD); M = multiple trauma trials (i.e., at least 50% of participants had multiple-event-related PTSD); M+ = conservative definition of multiple trauma trials (i.e., at least 90% of participants had multiple-event-related PTSD); U = unclear trials (i.e., 1-49% of participants had multiple-event-related PTSD OR reporting of trauma history was insufficient to warrant categorization). Note that unclear trials (U) were not included in the meta-analyses with regards to the dichotomous definition of trauma frequency (i.e., single vs. multiple trauma trials) and only included in the continuous moderator analysis of trauma frequency when the mean number of lifetime traumatic events was reported.

[b]No posttreatment assessment. Hence, follow-up sample sizes reported for the indicated trials (for follow-up 1 if assessed, otherwise for follow-up 2).

Appendix G: References of the 161 eligible trials including the 137 trials included in quantitative synthesis

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Appendix H: Sensitivity analysis: Short-term efficacy of psychological interventions for adult PTSD for trials involving participants with single vs. multiple trauma exposure (conservative definition)

Comparison	*Single vs. multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
Sensitivity analysis: more conservative definition of multiple trauma trials							
All psychological interventions vs. passive control conditions	single	11	**1·04*** **	**0·77 to 1·31 (0·40 to 1·69)**	43·05 (0·09)	1·85	0·95
	multiple	34	1·07***	0·78 to 1·37 (-0·51 to 2·66)	87·87*** (0·64)	1·81	
All psychological interventions vs. active control conditions	single	4	0·78*	0·15 to 1·40 (-0·40 to 1·95)	63·83* (0·26)	2·40	0·21
	multiple	31	0·44***	0·30 to 0·58 (-0·11 to 0·99)	53·45*** (0·07)	4·08	
	multiple outlier-adjusted	30	0·41***	0·28 to 0·54 (-0·06 to 0·88)	46·04** (0·05)	4·39	0·15
	multiple trim-and-fill-adjusted	34	0·38***	0·23 to 0·54	64·48*** (0·12)	4·70	n.a.
TF-CBT vs. passive control conditions	single	11	1·00***	0·77 to 1·24 (0·55 to 1·46)	25·47 (0·04)	1·92	0·52
	multiple	21	1·24***	0·80 to 1·68 (-0·72 to 1·68)	92·20*** (0·95)	1·61	
TF-CBT vs. active control conditions	single			n.a. (k = 3)			n.a.
	multiple	15	0·48***	0·28 to 0·69 (-0·15 to 1·12)	61·67*** (0·09)	3·75	
EMDR vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	6	0·37*	0·06 to 0·69 (-0·14 to 0·88)	26·90 (0·04)	4·82	
Non-TF interventions vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	9	0·75***	0·41 to 1·10 (-0·13 to 1·64)	64·23*** (0·17)	2·47	
Non-TF interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	10	0·43***	0·22 to 0·64 (-0·04 to 0·90)	44·46* (0·05)	4·19	
	multiple trim-and-fill-adjusted	13	0·30*	0·02 to 0·58	72·03*** (0·17)	5·93	n.a.
TF-CBT vs. non-TF interventions	single			n.a. (k = 3)			n.a.
	multiple	16	**0·10***	**0·01 to 0·19 (0·01 to 0·19)**	0·00 (0·00)	17·48	
	multiple outlier-adjusted	14	**0·10***	**0·01 to 0·19 (0·01 to 0·19)**	0·00 (0·00)	0·00	n.a.

ACC=Active Control Conditions; EMDR=Eye Movement Desensitization and Reprocessing; *k*=number of independent datapoints included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis); non-TF interventions=non-trauma-focused psychological interventions (e.g., present centered therapy); PCC=Passive Control Conditions; PI=Prediction Interval; TF-CBT=Trauma-focused Cognitive Behavioral Therapy. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy. Note that prediction intervals are not supplied by the trim-and-fill method.

*p<0·05; **p<0·01; ***p<0·001

[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥90% participants with multiple-event-related PTSD.

[b]testing differences in efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes)

Appendix I: Sensitivity analysis: Mid-term efficacy and long-term efficacy of psychological interventions for adult PTSD for trials involving participants with single vs. multiple trauma exposure (conservative definition)

Comparison	*Single vs. multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
Sensitivity analysis: more conservative definition of multiple trauma trials							
Mid-term efficacy (≤ 5 months follow-up)							
All psychological interventions vs. passive control conditions	single	4	**1·26*** **	**0·95 to 1·58 (0·95 to 1·58)**	0·00 (0·00)	1·59	0·34
	multiple	10	0·86***	0·37 to 1·36 (-0·67 to 2·39)	86·63*** (0·54)	2·18	
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	15	0·42***	0·21 to 0·63 (-0·25 to 1·09)	62·51*** (0·11)	4·28	
TF-CBT vs. passive control conditions	single	4	**1·26*** **	**0·95 to 1·58 (0·95 to 1·58)**	0·00 (0·00)	1·59	0·58
	multiple	5	0·96	-0·01 to 1·94 (-1·35 to 3·27)	93·38*** (1·14)	1·99	
TF-CBT vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	9	0·59***	0·31 to 0·86 (-0·11 to 1·28)	60·85* (0·11)	3·11	
Non-TF interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	5	0·17	-0·03 to 0·38 (-0·03 to 0·38)	0·00 (0·00)	10·39	
TF-CBT vs. non-TF interventions	single			n.a. (k = 2)			n.a.
	multiple	11	0·09	-0·01 to 0·19 (-0·01 to 0·19)	0·00 (0·00)	20·06	
Long-term efficacy (> 5 months follow-up)							
All psychological interventions vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	13	0·63***	0·38 to 0·89 (-0·13 to 1·40)	63·66*** (0·14)	2·89	
TF-CBT vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	12	**0·69*** **	**0·44 to 0·95 (0·01 to 1·38)**	55·83** (0·11)	2·66	
TF-CBT vs. non-TF interventions	single			n.a. (k = 1)			n.a.
	multiple	10	0·09	-0·02 to 0·20 (-0·02 to 0·20)	0·00 (0·00)	19·49	
	multiple outlier-adjusted	9	0·08	-0·03 to 0·18 (-0·03 to 0·18)	0·00 (0·00)	23·24	n.a.

ACC=Active Control Conditions; EMDR=Eye Movement Desensitization and Reprocessing; *k*=number of independent datapoints included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis); non-TF interventions=non-trauma-focused psychological interventions (e.g., present centered therapy); PCC=Passive Control Conditions; PI=Prediction Interval; TF-CBT=Trauma-focused Cognitive Behavioral Therapy. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy. Note that prediction intervals are not supplied by the trim-and-fill method.

*p<0·05; **p<0·01; ***p<0·001

[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥50% participants with multiple-event-related PTSD.

[b]testing differences in efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes)

Appendix J: Sensitivity analysis: Short-term efficacy of psychological interventions for adult PTSD for trials involving civilian participants with single vs. multiple trauma exposure

Comparison	*Single vs. multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
Trials exclusively involving civilian participants (sensitivity analysis)							
All psychological interventions vs. passive control conditions	single	11	**1·04*** **	**0·77 to 1·31 (0·40 to 1·69)**	43·05 (0·09)	1·85	0.73
	multiple	38	1·15***	0·88 – 1·42 (-0·43 – 2·73)	88·44*** (0·63)		
	multiple outlier-adjusted	37	1·09***	0·84 – 1·34 (-0·34 – 2·52)	86·40*** (0·51)	1·79	0·88
All psychological interventions vs. active control conditions	single	4	0·78*	0·15 – 1·40 (-0·40 – 1·95)	63·83* (0·26)	2·40	0·11
	multiple	20	0·36***	0·20 – 0·51 (-0·14 – 0·85)	46·53* (0·06)	5·04	
TF-CBT vs. passive control conditions	single	11	**1·00*** **	**0·77 to 1·24 (0·55 to 1·46)**	25·47 (0·04)	1·92	0·39
	multiple	27	1·29***	0·92 – 1·65 (-0·52 – 3·09)	90·90*** (0·81)	1·57	
TF-CBT vs. active control conditions	single			n.a. (k = 3)			n.a.
	multiple	13	0·39***	0·20 – 0·59 (-0·11 – 0·90)	48·16* (0·06)	4·57	
EMDR vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	4	0·37*	0·03 – 0·71 (-0·15 – 0·88)	32·03 (0·04)	4·90	
Non-TF interventions vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	7	0·88***	0·46 – 1·29 (-0·13 – 1·88)	71·24** (0·22)	2·15	
Other-TF interventions vs. passive control conditions	single			n.a. (k = 0)			n.a.
	multiple	5	**0·74*** **	**0·50 – 0·98 (0·50 – 0·98)**	0·00 (0·00)	2·51	
TF-CBT vs. non-TF interventions	single			n.a. (k = 3)			n.a.
	multiple	8	**0·19***	**0·03 – 0·34 (0·03 – 0·34)**	0·00 (0·00)	9·56	
	multiple outlier-adjusted	7	**0·23****	**0·07 – 0·39 (0·07 – 0·39)**	0·00 (0·00)	7·88	n.a.
TF-CBT vs. EMDR	single			n.a. (k = 2)			n.a.
	multiple	5	0·15	-0·20 – 0·49 (-0·37 – 0·66)	23·19 (0·00)	12·02	

ACC=Active Control Conditions; EMDR=Eye Movement Desensitization and Reprocessing; *k*=number of (independent) trials included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis); non-TF interventions=non-trauma-focused psychological interventions (e.g., present centered therapy); other-TF interventions=other trauma focused psychological interventions (i.e.; non-TF-CBT & non-EMDR interventions with trauma focus); PCC=Passive Control Conditions; PI=Prediction Interval; TF-CBT=Trauma-focused Cognitive Behavioral Therapy. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy. Note that prediction intervals are not supplied by the trim-and-fill method. *p<0·05; **p<0·01; ***p<0·001

[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥50% participants with multiple-event-related PTSD.

[b]testing differences in efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes) involving only civilian participants

Appendix K: Sensitivity analysis: Mid-term efficacy and long-term efficacy of psychological interventions for adult PTSD for trials involving civilian participants with single vs. multiple trauma exposure

Comparison	*Single vs. multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
Trials exclusively involving civilian participants (sensitivity analysis)							
Mid-term efficacy (≤ 5 months follow-up)							
All psychological interventions vs. passive control conditions	single	4	**1·26*** **	**0·95 to 1·58 (0·95 to 1·58)**	0·00 (0·00)	1·59	0·45
	multiple	12	0·92***	0·44 – 1·41 (-0·71 – 2·56)	86·77*** (0·63)	2·06	
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	14	0·44***	0·23 – 0·65 (-0·16 – 1·04)	51·50* (0·08)	4·09	
TF-CBT vs. passive control conditions	single	4	**1·26*** **	**0·95 to 1·58 (0·95 to 1·58)**	0·00 (0·00)	1·59	0·80
	multiple	7	1·14**	0·39 – 1·88 (-0·88 – 3·15)	90·12*** (0·91)	1·73	
TF-CBT vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	10	**0·58*** **	**0·35 – 0·81 (0·04 – 1·12)**	45·13 (0.06)	3·14	
TF-CBT vs. non-TF interventions	single			n.a. (k = 2)			n.a.
	multiple	5	**0·57*** **	**0·32 – 0·82 (0·18 – 0·96)**	26·40 (0·02)	3·20	
Long-term efficacy (> 5 months follow-up)							
All psychological interventions vs. passive control conditions	single			n.a. (k = 1)			n.a.
	multiple	4	**0·60*** **	**0·38 – 0·82 (0·38 – 0·82)**	0·00 (0·00)	3·05	
All psychological interventions vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	11	**0·64*** **	**0·42 – 0·86 (0·18 – 1·10)**	32·13 (0·04)	2·86	
TF-CBT vs. passive control conditions	single			n.a. (k = 1)			n.a.
	multiple	4	**0·60*** **	**0·38 – 0·82 (0·38 – 0·82)**	0·00 (0·00)	3·05	
TF-CBT vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	11	**0·64*** **	**0·42 – 0·86 (0·18 – 1·10)**	32·13 (0·04)	2·86	
TF-CBT vs. non-TF interventions	single			n.a. (k = 1)			n.a.
	multiple	4	0·50*	0·06 – 0·94 (-0·30 – 1·31)	59·89* (0·12)	3·61	

ACC=Active Control Conditions; EMDR=Eye Movement Desensitization and Reprocessing; *k*=number of (independent) trials included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis); non-TF interventions=non-trauma-focused psychological interventions (e.g., present centered therapy); PCC=Passive Control Conditions; PI=Prediction Interval; TF-CBT=Trauma-focused Cognitive Behavioral Therapy. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy. Note that prediction intervals are not supplied by the trim-and-fill method. *p<0·05; **p<0·01; ***p<0·001

[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥50% participants with multiple-event-related PTSD.

[b]testing differences in efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes) involving only civilian participants

Appendix L: Sensitivity analysis: Sex/gender-specific efficacy of psychological interventions for adult PTSD for trials involving participants with single vs. multiple trauma exposure

Comparison	*Single vs· multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
Trials exclusively involving only female participants (sensitivity analysis)							
Short-term efficacy (treatment endpoint)							
All psychological interventions vs. passive control conditions	single			n.a. (k = 1)			n.a.
	multiple	18	1·29***	0·89 to 1·70 (-0·36 to 2·95)	89·27*** (0·67)	1·56	
All psychological interventions vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	9	0·44**	0·16 to 0·71 (-0·25 to 1·12)	59·81* (0·10)	4·11	
TF-CBT vs. passive control conditions	single			n.a. (k = 1)			n.a.
	multiple	12	1·55***	1·02 to 2·09 (-0·27 to 3·37)	90·51*** (0·78)	1·38	
Non-TF interventions vs. passive control conditions	single			n.a. (k = 0)			n.a.
	multiple	5	0·85**	0·25 to 1·44 (-0·46 to 2·15)	76·14** (0·35)	2·22	
TF-CBT vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	5	0·49*	0·10 to 0·88 (-0·30 to 1·28)	64·18* (0·12)	3·69	
Mid-term efficacy (≤ 5 months follow-up)							
All psychological interventions vs· passive control conditions	single			n.a. (k = 0)			n.a.
	multiple	4	1·03	-0·31 to 2·37 (-1·88 to 3·93)	92·82*** (1·73)	1·88	
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	9	0·55***	0·29 to 0·81 (-0·08 to 1·17)	55·24* (0·09)	3·33	
TF-CBT vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	7	**0·69*** **	**0·44 to 0·93 (0·23 to 1·14)**	34·65 (0·04)	2·69	
Long-term efficacy (> 5 months follow-up)							
All psychological interventions vs. active control conditions	single			n.a. (k =0)			n.a.
	multiple	7	0·54**	0·20 to 0·89 (-0·26 to 1·35)	66·51** (0·14)	3·35	
TF-CBT vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	6	0·65***	0·31 to 0·99 (-0·06 to 1·36)	55·96* (0·10)	2·82	
Trials exclusively involving only male participants (sensitivity analysis)							
Short-term efficacy (treatment endpoint)							
All psychological interventions vs. passive control conditions	single			n.a. (k = 0)			n.a.
	multiple	6	1·23*	0·26 to 2·20 (-1·20 to 3·66)	89·77*** (1·30)	1·63	
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	6	**0·67*** **	**0·38 to 0·96 (0·38 to 0·96)**	0·00 (0·00)	2·75	

ACC=Active Control Conditions; *k*=number of (independent) trials included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis; PCC=Passive Control Conditions; PI=Prediction Interval; Non-TF interventions=non-trauma-focused psychological interventions. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy.

*p<0·05; **p<0·01; ***p<0·001

[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥50% participants with multiple-event-related PTSD.

[b]testing differences in sex/gender-specific efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes)

Appendix M: Sensitivity analysis: Efficacy of psychological interventions for adult PTSD for trials involving non-Western participants with single vs. multiple trauma exposure

Comparison	*Single vs· multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
Trials exclusively involving non-Western participants (sensitivity analysis)							
Short-term efficacy (treatment endpoint)							
All psychological interventions vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	8	1·17**	0·33 to 2·01 (-1·25 to 3·60)	93·83*** (1·35)	1·69	
All psychological interventions vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	6	0·42	-0·03 to 0·87 (-0·63 to 1·47)	80·86*** (0·23)	4·28	
TF-CBT vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	5	1·02	-0·30 to 2·35 (-2·13 to 4·18)	95·61*** (2·14)	1·89	
TF-CBT vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	5	0·51	-0·02 to 1·05 (-0·68 to 1·70)	84·14*** (0·29)	3·54	
Mid-term efficacy (≤ 5 months follow-up)							
All psychological interventions vs. passive control conditions	single			n.a. (k = 1)			n.a.
	multiple	5	0·52*	0·14 to 2·17 (-1·24 to 3·55)	92·75*** (1·23)	3·51	
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	4	0·47	-0·12 to 1·05 (-0·72 to 1·65)	78·66** (0·28)	3·87	
Long-term efficacy (> 5 months follow-up)							
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	6	**1·01*** **	**0·60 to 1·42 (0·14 to 1·88)**	59·86* (0·15)	1·91	

ACC=Active Control Conditions; *k*=number of (independent) trials included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis; PCC=Passive Control Conditions; PI=Prediction Interval. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy.
*p<0·05; **p<0·01; ***p<0·001
[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥50% participants with multiple-event-related PTSD.
[b]testing differences in efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes) involving only non-Western participants

Appendix N: Sensitivity analysis: Efficacy of psychological interventions for adult PTSD for high-quality trials involving participants with single vs. multiple trauma exposure

Comparison	*Single vs· multiple trauma trials*[a]	*k*	*g*	95% CI (95% PI)	I^2 (τ^2)	NNT	*p of moderation test*[b]
High quality trials*[c] *only (sensitivity analyses)							
Short-term efficacy (treatment endpoint)							
All psychological interventions vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	24	1·05***	0·76 to 1·34 (-0·27 to 2·37)	86·47*** (0·43)	1·84	
All psychological interventions vs. passive control conditions (outlier-adjusted)	single			n.a.			n.a.
	multiple	23	0·96***	0·72 to 1·20 (-0·08 to 2·00)	80·37*** (0·27)	1·99	
All psychological interventions vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	16	0·41***	0·20 to 0·61 (-0·27 to 1·08)	67·85*** (0.11)	4·44	
TF-CBT vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	19	1·01***	0·67 to 1·34 (-0·40 to 2·41)	88·60*** (0·48)	1·91	
TF-CBT vs. passive control conditions (outlier-adjusted)	single			n.a.			n.a.
	multiple	18	0·88***	0·62 to 1·15 (-0·14 to 1·91)	80·94*** (0·25)	2·14	
Non-TF interventions vs. passive control conditions	single			n.a. (k = 0)			n.a.
	multiple	4	**1·05*** **	**0·54 to 1·56 (0·01 to 2·09)**	78·21** (0·21)	1·85	
TF-CBT vs. active control conditions	single			n.a. (k = 1)			n.a.
	multiple	11	0·51***	0·23 to 0·79 (-0·32 to 1·34)	76·80*** (0·16)	3·55	
Non-TF interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	4	0·20	-0·01 to 0·41 (-0·01 to 0·41)	0.00 (0·00)	8·93	
TF-CBT vs. Non-TF interventions	single			n.a. (k = 1)			n.a.
	multiple	11	0·12*	0·01 to 0·23 (-0·03 to 0·27)	7·95 (0·00)	14·59	
	multiple (outlier-adjusted)	10	**0·13***	**0·04 to 0·24 (0·04 to 0·24)**	0·00 (0·00)	12·82	n.a.
Mid-term efficacy (≤ 5 months follow-up)							
All psychological interventions vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	6	1·17**	0·43 to 1·92 (-0·72 to 3·07)	91·86*** (0.79)	1·69	
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	9	0·50**	0·19 to 0·81 (-0·37 to 1·36)	74·43*** (0·17)	3·65	
TF-CBT vs. passive control conditions	single			n.a. (k = 2)			n.a.
	multiple	4	1·17	-0·00 to 2·34 (-1·38 to 3·71)	94·90*** (1.33)	1·69	
TF-CBT vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	6	0·71***	0·37 to 1·05 (-0·05 to 1·48)	67·35* (0·12)	2·59	
TF-CBT vs. Non-TF interventions	single			n.a. (k = 1)			n.a.
	multiple	9	0·24*	0·04 to 0·45 (-0·28 to 0·77)	67·84** (0·06)	7·29	
Long-term efficacy (> 5 months follow-up)							
All psychological interventions vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	6	0·76**	0·21 to 1·30 (-0·58 to 2·10)	86·28*** (0·39)	2·45	
TF-CBT vs. active control conditions	single			n.a. (k = 0)			n.a.
	multiple	5	0·91**	0·34 to 1·48 (-0·38 to 2·20)	83·13*** (0·34)	2·08	
TF-CBT vs. Non-TF interventions	single			n.a. (k = 1)			n.a.
	multiple	7	0·18	-0·04 to 0·40 (-0·32 to 0·68)	64·90* (0·05)	9·78	

ACC=Active Control Conditions; *k*=number of (independent) trials included in the analysis for the given comparison; n.a.=not applicable (i.e., number of trials too small [k<4] to conduct analysis; Non-TF interventions=non-trauma-focused psychological interventions;

PCC=Passive Control Conditions; PI=Prediction Interval. **Bold** font indicates that the CI as well as the PI exclude the null highlighting large certainty in the respective efficacy.
*p<0·05; **p<0·01; ***p<0·001
[a]single trauma trials being defined as trials involving 100% participants with single-event-related PTSD and multiple trauma trials being defined as trials involving ≥50% participants with multiple-event-related PTSD.
[b]testing differences in efficacy between single vs. multiple trauma trials (i.e., potential moderation of trauma frequency on efficacy outcomes) involving only high-quality trials
[c]high-quality trials being defined as trials fulfilling 7 out of 8 or 8 out of 8 quality criteria.

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