



Cognitive behavioural therapy

Introduction

Cognitive behavioural therapy (CBT) is one of the most common psychological treatments for mental disorders. It covers a broad range of therapies including the core components of cognitive restructuring and/or a behavioural therapy, such as exposure therapy. It can also include newer therapies such as acceptance and commitment therapy and metacognitive therapy. For PTSD, CBT challenges distorted, negative thinking patterns associated with the trauma to help people develop more adaptive cognitions and behaviours, and to rethink assumptions and reactions to the event.

This summary table includes the reviews that assess the overall effectiveness of CBT. For the effectiveness of individual components of CBT, please see the cognitive therapies, exposure therapies, and coping skills tables.

Method

We have included only systematic reviews (systematic literature search, detailed methodology with inclusion/exclusion criteria) published in full text, in English, from the year 2010 that report results separately for people with PTSD. Reviews were identified by searching the databases MEDLINE, EMBASE, and PsycINFO. When multiple copies of review topics were found, only the most recent and comprehensive version was included. We prioritised reviews with pooled data for inclusion.

Review reporting assessment was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist that describes a preferred way to present a meta-analysis¹. Reviews with less than 50% of items checked have been excluded from the library. Note that early reviews may have been guided by less stringent reporting checklists than the PRISMA, and that some reviews may have been limited by journal guidelines.

Evidence was graded using the Grading of Recommendations Assessment, Development

and Evaluation ([GRADE](#)) Working Group approach where high quality evidence such as that gained from randomised controlled trials (RCTs) may be downgraded to moderate or low if review and study quality is limited, if there is inconsistency in results, indirect comparisons, imprecise or sparse data and high probability of reporting bias. It may also be downgraded if risks associated with the intervention or other matter under review are high. Conversely, low quality evidence such as that gained from observational studies may be upgraded if effect sizes are large or if there is a dose dependent response. We have also taken into account sample size and whether results are consistent, precise and direct with low associated risks (see end of table for an explanation of these terms)². The resulting table represents an objective summary of the available evidence, although the conclusions are solely the opinion of staff of NeuRA (Neuroscience Research Australia).

Results

We found 14 systematic reviews that met our inclusion criteria³⁻¹⁶.

- Moderate quality evidence found between 53% and 63% of adults treated with CBT for PTSD remitted after treatment or at follow-up (mean 6.59 months).
- Moderate to high quality evidence found CBT, particularly individual, trauma-focussed CBT, was more effective than waitlist or nonspecific therapies (e.g., psychoeducation) at improving PTSD symptoms for over 12 months. Internet-delivered CBT also improved symptoms, particularly those that were guided by a therapist. Depression and anxiety may also be improved with CBT. Females showed more improvement with trauma-focussed CBT than males.
- In children and adolescents, moderate to low quality evidence found large improvements in PTSD symptoms when compared to no



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treatment with individual trauma-focussed CBT, combined trauma-focussed CBT plus parent training, Cohen trauma-focussed CBT/cognitive processing therapy, and group CBT.

- Moderate quality evidence found a large improvement in altered trauma-related cognitions with trauma-focussed CBT compared to no treatment. There was a small improvement in these cognitions with trauma-focussed CBT compared to present-centred therapy, treatment as usual, or relaxation. There was a small improvement in these cognitions with trauma-focussed CBT that included cognitive restructuring compared to trauma-focussed CBT with exposure but without cognitive restructuring. There was no difference in cognitions between trauma-focussed CBT with cognitive restructuring and trauma-focussed CBT without cognitive restructuring.
- In people with complex PTSD, moderate quality evidence found a large improvement in PTSD symptoms with CBT (with or without exposure therapy) compared to standard care/waitlist, and a small to medium-sized improvement when compared to nonspecific therapies. CBT also improved symptoms particularly pertaining to complex PTSD; disturbances in relationships, affect dysregulation, and negative self-concept when compared to standard care/waitlist (medium to large effects). CBT also improved disturbances in relationships when compared to nonspecific therapies (small effect).
- Moderate quality evidence found a large improvement in sleep symptoms and a reduction in heart beats per minute with CBT compared to waitlist or treatment as usual.
- Moderate quality evidence found factors associated with uptake of trauma-focussed CBT were (in descending order of effect); adaptability of staff workflow to CBT, veteran affairs service connection, staff familiarity with trauma-focussed CBT, mental health referral source, patient interest in trauma-centred treatment, Vietnam veterans, older

age, increased PTSD severity, comorbid depression, female gender, black or racial-ethnic minority, and previous psychotherapy.

- Moderate quality evidence found a medium-sized effect of less improvement in overall, intrusion, and arousal symptoms with CBT compared to eye movement desensitisation and reprocessing (EMDR). There were no differences in avoidance symptoms between EMDR and CBT.



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Carpenter JK, Andrews LA, Witcraft SM, Powers MB, Smits JAJ, Hofmann SG

Cognitive behavioural therapy for anxiety and related disorders: A meta-analysis of randomized placebo-controlled trials

Depression and Anxiety 2018; 35: 502-14

[View review abstract online](#)

Comparison	<p>Effectiveness of CBT vs. placebo in people with PTSD.</p> <p>A psychological placebo was defined as a condition involving interventions to control for nonspecific factors (e.g., contact with a therapist equivalent to the active treatment, reasonable rationale for the intervention, discussion of the psychological problem), and consisting only of treatment elements without demonstrated efficacy for PTSD.</p>
Summary of evidence	<p>Moderate to high quality evidence (large sample, precise, direct) found CBT, particularly individual CBT, was more effective than placebo at improving PTSD symptoms, although there were more dropouts with CBT.</p>
PTSD symptoms	
<p><i>CBT resulted in a significant, medium-sized improvement in PTSD symptoms;</i> 14 RCTs, N = 1,252, $g = 0.48$, 95%CI 0.26 to 0.71, $p < 0.0001$ Individual CBT was more effective than group CBT.</p> <p>There were no moderating effects of outcome rating measure (self-report vs. clinician administered), ethnicity, sample size, medication status, number of sessions, study year, and study quality.</p>	
Risks	There were more dropouts with CBT than placebo.
Consistency in results[‡]	Heterogeneity was not reported separately for PTSD
Precision in results[§]	Precise
Directness of results	Direct

Chen L, Zhang G, Hu M, Liang X

Eye movement desensitization and reprocessing versus cognitive behavioural therapy for adult posttraumatic stress disorder: systematic



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review and meta-analysis

Journal of Nervous and Mental Disease 2015; 203: 443-51

[View review abstract online](#)

Comparison	Effectiveness of CBT vs. eye movement desensitisation and reprocessing (EMDR) in adults with PTSD.
Summary of evidence	Moderate quality evidence (medium-sized sample, inconsistent, precise, direct) found a medium-sized effect that EMDR was more effective than CBT for overall, intrusion, and arousal, but not avoidance, PTSD symptoms.
PTSD symptoms	
<p><i>EMDR resulted in a significant, medium-sized effect of greater improvement in PTSD symptoms; 11 RCTs, N = 424, SMD = -0.43, 95%CI -0.86 to -0.01, p = 0.05, I² = 75%</i></p> <p>Results favoured EMDR for intrusion and arousal symptoms, but there was no difference in effectiveness for avoidance symptoms.</p> <p>Cumulative meta-analysis showed EMDR was better than CBT as published data accumulated. There were no moderating effects of sex, trauma type. There were no differences between EMDR and CBT in the CBT variant analyses (exposure, exposure + cognitive restructuring, stress inoculation).</p>	
Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Direct

Diehle J, Schmitt K, Daams JG, Boer F, Lindauer RJ

Effects of psychotherapy on trauma-related cognitions in posttraumatic stress disorder: a meta-analysis

Journal of Traumatic Stress 2014; 27: 257-64

[View review abstract online](#)

Comparison	Effectiveness of trauma-focussed CBT for altered cognitions vs. controls in people with PTSD.
Summary of evidence	Moderate quality evidence (medium-sized sample, some inconsistency and imprecision, direct) found a large improvement in symptoms and altered trauma-related



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	<p>cognitions with trauma-focussed CBT compared to no treatment. There was a small improvement in cognitions with trauma-focussed CBT compared to present-centred therapy, treatment as usual, or relaxation. There was a small improvement in cognitions with trauma-focussed CBT with cognitive restructuring compared to trauma-focussed CBT interventions with exposure but without cognitive restructuring. There was no significant difference between trauma-focussed CBT with cognitive restructuring and trauma-focussed CBT without cognitive restructuring.</p> <p>Authors conclude that treatments that incorporate a combination of imaginal and in vivo exposure or imaginal and in vivo exposure and cognitive restructuring showed the best results.</p>
<p>Altered trauma-related cognitions (about the self, the world, and other people)</p>	
<p><i>A large effect showed improved symptoms and cognitions with trauma-focussed CBT compared to waitlist/no treatment;</i></p> <p>Symptoms: 9 RCTs, N = 481, $g = 1.56$, 95%CI 1.05 to 2.07, $p < 0.001$, $I^2 = 82\%$ Cognitions: 9 RCTs, N = 452, $g = 1.21$, 95%CI 0.69 to 1.72, $p < 0.001$, $I^2 = 84\%$</p> <p><i>A small effect showed improved cognitions, and a medium-sized trend effect showed improved symptoms, with trauma-focussed CBT compared to present-centred therapy, treatment as usual, or relaxation;</i></p> <p>Symptoms: 5 RCTs, N = 219, $g = 0.55$, 95%CI -0.08 to 1.17, $p = 0.086$, $I^2 = 79\%$ Cognitions: 5 RCTs, N = 221, $g = 0.36$, 95%CI 0.09 to 0.63, $p = 0.009$, $I^2 = 0\%$</p> <p><i>A small effect showed improved cognitions with trauma-focussed CBT with cognitive restructuring compared to trauma-focussed CBT interventions with exposure but without cognitive restructuring;</i></p> <p>Cognitions: 7 RCTs, N = 328, $g = 0.27$, 95%CI 0.03 to 0.50, $p = 0.027$, $I^2 = 13\%$</p> <p><i>There was no significant difference between trauma-focussed CBT with cognitive restructuring and trauma-focussed CBT without cognitive restructuring;</i></p> <p>Cognitions: 4 RCTs, N = 169, $g = 0.19$, 95%CI -0.12 to 0.49, $p = 0.224$, $I^2 = 1\%$</p> <p>There were also no differences at long-term follow-up (up to 12 months).</p> <p>There were no moderating effects of sex.</p> <p>Authors conclude that treatments that incorporate a combination of imaginal and in vivo exposure or imaginal and in vivo exposure and cognitive restructuring showed the best results.</p>	
<p>Consistency in results</p>	<p>Inconsistent for symptoms, consistent for cognitions, apart from the waitlist/no treatment comparison.</p>
<p>Precision in results</p>	<p>Precise, apart from the waitlist/no treatment comparison.</p>
<p>Directness of results</p>	<p>Direct</p>



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Forman-Hoffman V, Middleton JC, Feltner C, Gaynes BN, Weber RP, Bann C, Viswanathan M, Lohr KN, Baker C, Green J

Psychological and Pharmacological Treatments for Adults With Posttraumatic Stress Disorder: A Systematic Review Update

Agency for Healthcare Research and Quality Comparative Effectiveness Reviews (US)
Report No.: 18-EHC011-EF: 2018-SR-01

[View review abstract online](#)

Comparison	Effectiveness of CBT-mixed vs. inactive control conditions (waitlist or usual care) for PTSD symptoms in adults with PTSD.
Summary of evidence	Moderate quality evidence (large samples, inconsistent, precise, indirect) found large effects of reduced PTSD, depression, and anxiety symptoms, and more loss of PTSD diagnosis following CBT.
PTSD symptoms	
<p><i>Large effects showed reduced PTSD, depression and anxiety symptoms, and more loss of PTSD diagnosis, with CBT;</i></p> <p>PTSD symptoms: 21 RCTs, N = 1,349, SMD = -1.01, 95%CI -1.28 to -0.74, I² = 81% Depression symptoms: 15 RCTs, N = 929, SMD = -0.87, 95%CI -1.14 to -0.61, I² = 72% Anxiety symptoms: 5 RCTs, N = 257, SMD = -0.79, 95%CI -1.31 to -0.27, I² = 83% Loss of PTSD diagnosis: 9 RCTs, N = 474, RD = 0.29, 95%CI 0.11 to 0.41, I² = 58%</p> <p>The effects for PTSD and depression symptoms persisted but were slightly smaller at follow-up (3-6 months).</p>	
Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Indirect; mixed control conditions

Gonçalves R, Rodrigues H, Novaes F, Arbol J, Volchan E, Silva Freire Coutinho E, Figueira I, Ventura P

Listening to the heart: A meta-analysis of cognitive behaviour therapy



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impact on the heart rate of patients with anxiety disorders

Journal of Affective Disorders 2015; 172: 231-40

[View review abstract online](#)

Comparison	Effectiveness of CBT for reduction of heart rate vs. waitlist or treatment as usual in people with PTSD.
Summary of evidence	Moderate quality evidence (small sample, consistent, direct) found a reduction in heart beats per minute with CBT compared to waitlist or treatment as usual.
Heart rate	
<i>A significant reduction in beats per minute was found with CBT; 3 RCTs, N = 67, WMD = -1.81bpm, 95%CI -3.02 to -0.61, p < 0.05, I² = 10%</i>	
Consistency in results	Consistent
Precision in results	Unable to assess; not standardised
Directness of results	Indirect; mixed control conditions

Ho F, Chan C, Tang K

Cognitive-behavioural therapy for sleep disturbances in treating posttraumatic stress disorder symptoms: A meta-analysis of randomized controlled trials

Clinical Psychology Review 2016; 43: 90-102

[View review abstract online](#)

Comparison	Effectiveness of sleep-focussed CBT for symptoms and sleep vs. waitlist or psychoeducation in people with PTSD. Treatments included group or individual CBT for insomnia, exposure, rescripting and relaxation, imagery rehearsal, mind-body bridging, or behavioural sleep intervention.
Summary of evidence	Moderate quality evidence (medium-sized sample, mostly consistent and precise, indirect) found medium to large improvements in PTSD and depression symptoms, and large improvements in sleep symptoms with CBT.
Sleep	



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11 RCTs, N = 593

There were significant, medium to large improvements in PTSD and depression symptoms, and large improvements in sleep symptoms with CBT;

PTSD symptoms: 8 RCTs, SMD = -0.58, 95%CI -0.85 to -0.30, $p < 0.001$, $I^2 = 42\%$

Depression symptoms: 7 RCTs, SMD = -0.44, 95%CI -0.66 to -0.22, $p < 0.001$, $I^2 = 0\%$

Sleep onset latency: 4 RCTs, SMD = -0.83, 95%CI -1.19 to -0.47, $p < 0.001$, $I^2 = 0\%$

Wake after sleep onset: 4 RCTs, SMD = -1.02, 95%CI -1.39 to -0.66, $p < 0.001$, $I^2 = 0\%$

Sleep efficiency: 5 RCTs, SMD = 1.15, 95%CI 0.75 to 1.56, $p < 0.001$, $I^2 = 37\%$

There was no significant difference in total sleep time.

Consistency in results	Mostly consistent
Precision in results	Mostly precise
Directness of results	Indirect; mixed control conditions

Karatzias T, Murphy P, Cloitre M, Bisson J, Roberts N, Shevlin M, Hyland, Maercker P, Ben-Ezra A, Coventry M, Mason-Roberts P, Bradley S, Aoife Hutton P

**Psychological interventions for ICD-11 complex PTSD symptoms:
Systematic review and meta-analysis**

Psychological Medicine 2019; 49: 1761-75

[View review abstract online](#)

Comparison	<p>Effectiveness of CBT vs. standard care/waitlist or nonspecific controls in people with complex PTSD.</p> <p>Complex PTSD is characterised by core symptoms of PTSD (re-experiencing the trauma, avoidance of traumatic reminders, and exaggerated startle and hypervigilance) plus disturbances in self organisation, affect dysregulation, negative self-concept, and relationships.</p>
Summary of evidence	<p>Moderate quality evidence (mostly large samples, inconsistent, precise, indirect) found a large effect of improved PTSD symptoms with CBT compared to standard care/waitlist, and a small to medium-sized effect when compared to nonspecific therapies. CBT also improved disturbances in relationships, affect dysregulation, and negative self-concept when compared to standard care/waitlist (medium to large effects). CBT improved disturbances in relationships when compared to</p>



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	nonspecific therapies (small effect).
PTSD symptoms	
<p><i>CBT with or without exposure therapy showed a large effect of improved PTSD symptoms when compared to standard care/waitlist;</i></p> <p>27 RCTs, N = 1,672, $g = -0.90$, 95%CI -1.11 to -0.68, $p < 0.001$, $I^2 = 76\%$</p> <p><i>CBT with or without exposure therapy showed a small to medium-sized effect of improved PTSD symptoms when compared to nonspecific therapies;</i></p> <p>9 RCTs, N = 731, $g = -0.37$, 95%CI -0.66 to -0.09, $p = 0.011$, $I^2 = 71\%$</p> <p>Authors report that childhood-onset trauma was associated with poorer outcomes than adult-onset trauma.</p>	
Disturbances in relationships	
<p><i>CBT with or without exposure therapy showed a medium-sized effect of improved relationships when compared to standard care/waitlist;</i></p> <p>16 RCTs, N = 880, $g = -0.66$, 95%CI -0.84 to -0.48, $p < 0.001$, $I^2 = 45\%$</p> <p><i>CBT with or without exposure therapy showed a small effect of improved relationships when compared to nonspecific therapies;</i></p> <p>3 RCTs, N = 207, $g = -0.32$, 95%CI -0.60 to -0.03, $p = 0.029$, $I^2 = 0\%$</p>	
Affect dysregulation	
<p><i>CBT with or without exposure therapy showed a large effect of improved affect regulation when compared to standard care/waitlist;</i></p> <p>3 RCTs, N = 115, $g = -1.42$, 95%CI -2.20 to -0.65, $p < 0.001$, $I^2 = 71\%$</p> <p>CBT with or without exposure had no significant effect on affect regulation when compared to non-specific therapies.</p>	
Negative self-concept	
<p><i>CBT with or without exposure therapy showed a large effect of improved negative self-concept when compared to standard care/waitlist;</i></p> <p>9 RCTs, N = 601, $g = -0.82$, 95%CI -1.19 to -0.44, $p < 0.001$, $I^2 = 79\%$</p> <p>CBT with or without exposure had no significant effect on negative self-concept when compared to non-specific therapies.</p>	
Consistency in results	Mostly inconsistent
Precision in results	Mostly precise
Directness of results	Indirect; mixed control conditions



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Lewis C, Roberts NP, Simon N, Bethell A, Bisson JI

Internet-delivered cognitive behavioural therapy for post-traumatic stress disorder: systematic review and meta-analysis

Acta Psychiatrica Scandinavica 2019; 140: 508-21

[View review abstract online](#)

Comparison	Effectiveness of internet-delivered CBT with or without therapist guidance vs. waitlist/treatment as usual/minimal attention in adults with PTSD.
Summary of evidence	Moderate quality evidence (medium-sized sample, inconsistent, precise, indirect) found medium-sized improvement in PTSD, depression, and anxiety symptoms after internet-delivered CBT compared to waitlist, particularly interventions that were trauma-focussed and guided by a therapist.
PTSD symptoms	
<p><i>A medium-sized effect of greater improvement in PTSD symptoms with internet-delivered CBT than waitlist/treatment as usual/minimal attention;</i></p> <p style="text-align: center;">8 RCTs, N = 560, SMD = -0.60, 95%CI -0.97 to -0.24, $p < 0.001$, $I^2 = 76\%$</p> <p>There was evidence of greater treatment effect from trauma-focussed internet-delivered CBT than non-trauma-focussed internet-delivered CBT without a trauma focus.</p> <p>The treatment effect was increased by the provision of guidance by a therapist.</p> <p>Depression, anxiety, and quality of life also improved with internet-delivered CBT compared to waitlist both at post-treatment and at follow-up.</p> <p>There was no difference in PTSD symptoms between internet-delivered CBT and waitlist at follow-up (3-6 months).</p> <p>There was no difference when comparing internet-delivered CBT with other internet-delivered interventions (from two small studies).</p>	
Risks	There were more dropouts with internet-delivered CBT than with waitlist/treatment as usual/minimal attention, and no differences in dropout rates between internet-delivered CBT and other internet-delivered interventions.
Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Indirect; mixed control conditions



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Mavranezouli I, Megnin-Viggars O, Daly C, Dias S, Welton NJ, Stockton S, Bhutani G, Grey N, Leach J, Greenberg N, Katona C, El-Leithy S, Pilling S

Psychological treatments for post-traumatic stress disorder in adults: a network meta-analysis

Psychological Medicine 2020; 50: 542-55

[View review abstract online](#)

Comparison	Effectiveness of CBT vs. waitlist condition post-treatment and at 1-4-month follow-up in adults with PTSD.
Summary of evidence	Moderate to low quality evidence (medium to large sized samples, inconsistent, imprecise, indirect) found CBT (particularly trauma-focussed CBT) was effective at reducing PTSD symptoms post-treatment and at 1-4-months follow-up. CBT was also effective at increasing remission rates by treatment endpoint.
PTSD symptoms	
<p><i>The following CBT therapies resulted in significant, large improvements in PTSD symptoms between baseline and treatment endpoint;</i></p> <p>Trauma-focussed CBT: 29 RCTs, N = 903, SMD = -1.46, 95%CrI -1.87 to -1.05</p> <p>Trauma-focussed CBT + SSRI antidepressants: 3 RCTs, N = 115, SMD = -1.21, 95%CrI -2.35 to -0.07</p> <p>Non-trauma-focussed CBT: 7 RCTs, N = 209, SMD = -1.22, 95%CrI -1.95 to -0.49</p> <p><i>Trauma-focussed CBT also showed a significant, medium to large improvement in PTSD symptoms at the 1-4 month follow-up;</i></p> <p>13 RCTs, N = 753, SMD = -0.73, 95%CrI -1.23 to -0.25</p> <p>There was no significant effect of non-trauma-focussed CBT at the 1-4 month follow-up.</p> <p><i>The following CBT therapies showed significant large increases in remission rates between baseline and treatment endpoint;</i></p> <p>Trauma-focussed CBT: 21 RCTs, N = 601, LOR = 2.46, 95%CrI 1.79 to 3.19</p> <p>Non-trauma-focussed CBT: 2 RCTs, N = 65, LOR = 3.30, 95%CrI 1.48 to 5.29</p> <p>There were no significant effects post-treatment of trauma-focussed CBT + SSRI antidepressants.</p>	
Consistency in results	Authors report high heterogeneity across trials.
Precision in results	Imprecise
Directness of results	Indirect; network meta-analysis



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Mavranetzouli I, Megnin-Viggars O, Daly C, Dias S, Stockton S, Meiser-Stedman R, Trickey D, Pilling S

Research Review: Psychological and psychosocial treatments for children and young people with post-traumatic stress disorder: a network meta-analysis

Journal of Child Psychology and Psychiatry, and Allied Disciplines 2020; 61: 18-29

[View review abstract online](#)

Comparison	Effectiveness of CBT vs. waitlist/no treatment for PTSD symptoms in children and adolescents (up to 18 years old).
Summary of evidence	Moderate to low quality evidence (large overall sample, unclear consistency, imprecise, indirect) found large effects of reduced PTSD symptom severity compared to waitlist/no treatment with individual trauma-focussed CBT, combined trauma-focussed CBT plus parent training, Cohen trauma-focussed CBT/cognitive processing therapy, and group CBT.
PTSD symptoms	
29 RCTs, N = 1,960	
<i>The following therapies showed large effects of improved PTSD symptoms post-treatment compared to waitlist/no treatment;</i>	
Cognitive therapy for PTSD (a form of individual trauma-focussed CBT): SMD = -2.94, 95%CrI -3.94 to -1.95	
Combined trauma-focussed CBT and parent training: SMD = -1.79, 95%CrI -3.15 to -0.45	
Cohen trauma-focussed CBT/cognitive processing therapy: SMD = -1.17, 95%CrI -1.78 to -0.54	
Group CBT: SMD = -0.91, 95%CrI -1.48 to -0.34	
At 1-4 months follow-up, Cohen trauma-focussed CBT/cognitive processing therapy and combined trauma-focussed CBT plus parent training showed large effects.	
Consistency in results	Authors report no inconsistency between direct and indirect evidence. Consistency between individual study results is unclear.
Precision in results	Imprecise
Directness of results	Indirect; network meta-analysis



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Springer KS, Levy HC, Tolin DF

Remission in CBT for adult anxiety disorders: A meta-analysis

Clinical Psychology Review 2018; 61: 1-8

[View review abstract online](#)

Comparison	Rates of remission in adults with PTSD after treatment with CBT monotherapy.
Summary of evidence	Moderate quality evidence (unclear sample size, inconsistent, appears precise, direct) found around 53-63% of people treated with CBT for PTSD remitted after treatment or at follow-up (mean 6.59 months).
Rates of remission over time	
<u>ITT analysis</u>	
Post-treatment: 20 studies, N not reported, remission = 53.3%, 95%CI 45.3% to 61.1%, I ² = 88%	
Follow-up: 13 studies, N not reported, remission = 54.8%, 95%CI 44.7% to 64.4%, I ² = 88%	
<u>Completer analysis</u>	
Post-treatment: 23 studies, N not reported, remission = 62.8%, 95% 52.1% to 72.3%, I ² = 91%	
Follow-up: 17 studies, N not reported, remission = 63.5%, 95%CI 48.7% to 76.1%, I ² = 93%	
Consistency in results	Inconsistent
Precision in results	Appears precise
Directness of results	Direct

Van Den Berk Clark C, Moore R, Secrest S, Tuerk P, Norman S, Myers U, Lustman P, Schneider F, Barnes J, Gallamore R, Ovais M, Plurad J, Scherrer J

Factors associated with receipt of cognitive-behavioral therapy or prolonged exposure therapy among individuals with PTSD

Psychiatric Services 2019; 70: 703-13

[View review abstract online](#)

Comparison	Factors associated with uptake of trauma-focussed CBT or prolonged exposure therapy.
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<p>Summary of evidence</p>	<p>Moderate quality evidence (large samples, inconsistent, some imprecision, direct) found factors associated with uptake of trauma-focussed CBT were (in descending order of effect); adaptability of staff workflow to CBT, veteran affairs service connection, staff familiarity with trauma-focussed CBT, mental health referral source, patient interest in trauma-centred treatment, Vietnam veterans, older age, increased PTSD severity, comorbid depression, female gender, black or racial-ethnic minority, and previous psychotherapy.</p>
<p align="center">Factors increasing uptake</p>	
<p><i>There was increased rates of initiation with (in descending order of effect);</i></p> <p>Adaptability of staff workflow: 2 studies, N = 63,052, OR = 4.66, 95%CI 1.60 to 7.72, $p < 0.05$</p> <p>Veteran affairs service connection: 3 studies, N = 631,067, OR = 2.30, 95%CI 2.18 to 2.42, $p < 0.05$</p> <p>Staff exposure to trauma CBTs: 3 studies, N = 693,796, OR = 2.30, 95%CI 2.09 to 2.52, $p < 0.05$</p> <p>Mental health referral source: 2 studies, N = 61,452, OR = 2.28, 95%CI 1.05 to 3.50, $p < 0.05$</p> <p>Interest in trauma-centered treatment: 1 study, N = 476, OR = 2.13, 95%CI 1.37 to 3.30, $p < 0.05$</p> <p>Vietnam veteran: 3 studies, N = 964, OR = 1.58, 95%CI 1.00 to 2.15, $p < 0.05$</p> <p>Older age: 9 studies, N = 645,407, OR = 1.56, 95%CI 1.51 to 1.61, $p < 0.05$</p> <p>Increased PTSD severity: 6 studies, N = 1,890, OR = 1.46, 95%CI 1.13 to 1.78, $p < 0.05$</p> <p>Comorbid depression: 9 studies, N = 288,486, OR = 1.21, 95%CI 1.14 to 1.29, $p < 0.05$</p> <p>Female gender: 8 studies, N = 288,848, OR = 1.18, 95%CI 1.08 to 1.27, $p < 0.05$</p> <p>Black or racial-ethnic minority: 9 studies, N = 288,470, OR = 1.16, 95%CI 1.03 to 1.28, $p < 0.05$</p> <p>Previous psychotherapy: 5 studies, N = 274,206, OR = 1.01, 95%CI 1.01 to 1.02, $p < 0.05$</p>	
<p>Consistency in results</p>	<p>Authors report results are inconsistent, although including only high-quality studies reduced heterogeneity for sex, race, military era, and staff training.</p>
<p>Precision in results</p>	<p>Some imprecision</p>
<p>Directness of results</p>	<p>Direct</p>

Van Dis EAM, Van Veen SC, Hagenars MA, Batelaan NM, Bockting CLH, Van Den Heuvel RM, Cuijpers P, Engelhard IM

Long-term Outcomes of Cognitive Behavioural Therapy for Anxiety-



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Related Disorders: A Systematic Review and Meta-analysis

JAMA Psychiatry 2020; 77: 265-73

[View review abstract online](#)

Comparison	Long-term effects (>12 months) of CBT treatment vs. controls (usual care, relaxation, psychoeducation, pill placebo, supportive therapy, waitlist, tension) in adults with PTSD.
Summary of evidence	Moderate quality evidence (large sample size, mostly inconsistent and precise, indirect) found medium to large improvements in PTSD symptoms with CBT for over 12 months.
PTSD symptoms	
<p><i>Medium to large improvements in PTSD symptoms with CBT for over 12 months;</i> End of treatment: 30 studies, N = 2,080, $g = 0.72$, 95%CI 0.52 to 0.93, $p < 0.05$, $I^2 = 74\%$ 1-6 months: 24 studies, $g = 0.67$, 95%CI 0.46 to 0.88, $p < 0.05$, $I^2 = 63\%$ 6-12 months: 11 studies, $g = 0.59$, 95%CI 0.42 to 0.77, $p < 0.05$, $I^2 = 12\%$ >12 months: 5 studies, $g = 0.84$, 95%CI 0.03 to 1.64, $p < 0.05$, $I^2 = 88\%$</p>	
Consistency in results	Inconsistent, apart from 6-12 months
Precision in results	Precise, apart from >12 months
Directness of results	Indirect; mixed control conditions

Wade D, Varker T, Kartal D, Hetrick S, O'Donnell M, Forbes D

Gender difference in outcomes following trauma-focused interventions for posttraumatic stress disorder: Systematic review and meta-analysis

Psychological Trauma: Theory, Research, Practice and Policy 2016; 8: 356-64

[View review abstract online](#)

Comparison	Gender differences in the effects of trauma-focussed CBT vs. controls (usual care, waitlist/no treatment, attention, medication, or non-trauma-focussed interventions) in adults with PTSD.
Summary of evidence	Moderate quality evidence (large sample, inconsistent, precise, indirect) found larger effect sizes in females with PTSD than in males with PTSD following trauma-focussed CBT.

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PTSD symptoms	
<p><i>The effect size was larger for females than for males at post-treatment;</i></p> <p>Females: 28 studies, N = 1,701, SMD = -1.05, 95%CI -1.31 to -0.78, $p < 0.00001$, $I^2 = 80\%$</p> <p>Males: 18 studies, N = 712, SMD = -0.64, 95%CI -0.94 to -0.35, $p < 0.0001$, $I^2 = 56\%$</p> <p>Authors report the effect was larger for females at short-term, but not long-term follow-up.</p>	
Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Indirect; mixed control conditions

Explanation of acronyms

β = beta coefficient, CI = confidence interval, CrI = credible interval, d or g = Cohen's d and Hedges' g , standardised mean difference, EMDR = eye movement desensitisation and reprocessing, I^2 = the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance), LOR = log odds ratio, N = number of participants, RD = risk difference, SMD = standardised mean difference, p = statistical probability of obtaining that result, vs. = versus, WMD = weighted mean difference



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Explanation of technical terms

* Bias has the potential to affect reviews of both RCT and observational studies. Forms of bias include; reporting bias – selective reporting of results; publication bias - trials that are not formally published tend to show less effect than published trials, further if there are statistically significant differences between groups in a trial, these trial results tend to get published before those of trials without significant differences; language bias – only including English language reports; funding bias - source of funding for the primary research with selective reporting of results within primary studies; outcome variable selection bias; database bias - including reports from some databases and not others; citation bias - preferential citation of authors. Trials can also be subject to bias when evaluators are not blind to treatment condition and selection bias of participants if trial samples are small¹⁷.

† Different effect measures are reported by different reviews.

Prevalence refers to how many existing cases there are at a particular point in time. Incidence refers to how many new cases there are per population in a specified time period. Incidence is usually reported as the number of new cases per 100,000 people per year. Alternatively some studies present the number of new cases that have accumulated over several years against a person-years denominator. This denominator is the sum of individual units of time that the persons in the population are at risk of becoming a case. It takes into account the size of the underlying population sample and its age structure over the duration of observation.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified

(100% sensitivity = correct identification of all actual positives) and specificity is the proportion of negatives that are correctly identified (100% specificity = not identifying anyone as positive if they are truly not).

Weighted mean difference scores refer to mean differences between treatment and comparison groups after treatment (or occasionally pre to post treatment) and in a randomised trial there is an assumption that both groups are comparable on this measure prior to treatment. Standardised mean differences are divided by the pooled standard deviation (or the standard deviation of one group when groups are homogenous) that allows results from different scales to be combined and compared. Each study's mean difference is then given a weighting depending on the size of the sample and the variability in the data. Less than 0.4 represents a small effect, around 0.5 a medium effect, and over 0.8 represents a large effect¹⁷.

Odds ratio (OR) or relative risk (RR) refers to the probability of a reduction (< 1) or an increase (> 1) in a particular outcome in a treatment group, or a group exposed to a risk factor, relative to the comparison group. For example, a RR of 0.75 translates to a reduction in risk of an outcome of 25% relative to those not receiving the treatment or not exposed to the risk factor. Conversely, a RR of 1.25 translates to an increased risk of 25% relative to those not receiving treatment or not having been exposed to a risk factor. A RR or OR of 1.00 means there is no difference between groups. A medium effect is considered if $RR > 2$ or < 0.5 and a large effect if $RR > 5$ or < 0.2 ¹⁸. InOR stands for logarithmic OR where a InOR of 0 shows no difference between groups. Hazard ratios measure the effect of an explanatory variable on the hazard or risk of an event.

Correlation coefficients (eg, r) indicate the strength of association or relationship

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between variables. They can provide an indirect indication of prediction, but do not confirm causality due to possible and often unforeseen confounding variables. An r of 0.10 represents a weak association, 0.25 a medium association and 0.40 and over represents a strong association. Unstandardised (b) regression coefficients indicate the average change in the dependent variable associated with a 1 unit change in the independent variable, statistically controlling for the other independent variables. Standardised regression coefficients represent the change being in units of standard deviations to allow comparison across different scales.

‡ Inconsistency refers to differing estimates of effect across studies (i.e. heterogeneity or variability in results) that is not explained by subgroup analyses and therefore reduces confidence in the effect estimate. I^2 is the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance) - 0% to 40%: heterogeneity might not be important, 30% to 60%: may represent moderate heterogeneity, 50% to 90%: may represent considerable heterogeneity and over this is considerable heterogeneity. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula¹⁷;

$$I^2 = \left(\frac{Q - df}{Q} \right) \times 100\%$$

§ Imprecision refers to wide confidence intervals indicating a lack of confidence in the effect estimate. Based on GRADE recommendations, a result for continuous data (standardised mean differences, not weighted mean differences) is considered imprecise if the upper or lower confidence

limit crosses an effect size of 0.5 in either direction, and for binary and correlation data, an effect size of 0.25. GRADE also recommends downgrading the evidence when sample size is smaller than 300 (for binary data) and 400 (for continuous data), although for some topics, these criteria should be relaxed¹⁹.

|| Indirectness of comparison occurs when a comparison of intervention A versus B is not available but A was compared with C and B was compared with C that allows indirect comparisons of the magnitude of effect of A versus B. Indirectness of population, comparator and/or outcome can also occur when the available evidence regarding a particular population, intervention, comparator, or outcome is not available and is therefore inferred from available evidence. These inferred treatment effect sizes are of lower quality than those gained from head-to-head comparisons of A and B.



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