Psychological treatments for chronic post-traumatic stress disorder: systematic review and meta-analysis

CRD summary
This review assessed and compared the efficacy of psychological treatments for chronic post-traumatic stress disorder (PTSD). The authors concluded that trauma-focused cognitive behavioural therapy and eye movement desensitisation and reprocessing should be used as first-line treatments. This was a well-conducted review of small trials and the authors' conclusions are appropriate.

Authors' objectives
To assess the efficacy of psychological treatments in reducing the symptoms of chronic post-traumatic stress disorder (PTSD), and to compare the efficacy of different types of psychological treatment.

Searching
MEDLINE, EMBASE, PsycINFO and CINAHL were searched from inception to August 2004. The references of retrieved articles and previous systematic reviews and meta-analyses were checked. Only papers with English language abstracts were eligible for inclusion. Experts were contacted in order to identify unpublished studies.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion in the review. Eligible studies had to retain at least 50% of the sample at the post-treatment assessment.

Specific interventions included in the review
Studies that assessed a psychological treatment, and in which PTSD symptoms were the primary target of treatment, were eligible for inclusion. The included studies assessed the following forms of treatment: trauma-focused cognitive-behavioural therapy (CBT), group trauma-focused CBT, group CBT, stress management, eye movement desensitisation and reprocessing (EMDR), and other therapies including supportive therapy, non-directive counselling, psychodynamic therapies and hypnotherapy. The control treatments were waiting list, usual care and another psychological therapy.

Participants included in the review
Studies of adults aged over 16 years were eligible for inclusion. All participants had to have had PTSD symptoms for a minimum of 3 months following a traumatic event, and at least 70% of the participants had to have a diagnosis of PTSD. There was no restriction on the nature of the traumatic event experienced.

Outcomes assessed in the review
Studies that assessed PTSD symptoms using a recognised scale were eligible for inclusion. Eligible studies reported a minimum of pre-treatment and post-treatment measures. The primary outcomes were the retention of a diagnosis of PTSD, and assessor-rated and self-reported severity of PTSD symptoms. An assessment of tolerability of treatment was also planned. Some of the included studies also reported anxiety and depression.

How were decisions on the relevance of primary studies made?
A team of reviewers assessed studies for inclusion in the review. Any disagreements were resolved through discussion.

Assessment of study quality
One reviewer assessed the studies for validity using the following criteria: randomisation, allocation concealment,
blinding of outcome assessment, number of withdrawals, tolerability of treatment, adequate data reporting, and use of intention-to-treat analysis. A second reviewer checked the assessment.

**Data extraction**
One reviewer extracted the data into pre-designed forms and a second reviewer checked the extraction. Relative risks (RRs) with 95% confidence intervals (CIs) were calculated for dichotomous outcomes and standardised mean differences with 95% CIs for continuous outcomes. Intention-to-treat analysis using a worst-case scenario was used for dichotomous outcomes; completer data was used for the continuous outcomes.

**Methods of synthesis**
How were the studies combined?
The studies were combined in a fixed-effect meta-analysis where no statistically significant heterogeneity was detected; where significant heterogeneity was found, a random-effects model (DerSimonian and Laird) was reported.

How were differences between studies investigated?
Statistical heterogeneity between studies was assessed using the chi-squared and I-squared tests of heterogeneity. The studies were grouped by category of psychological treatment. Sensitivity analyses were undertaken to investigate the effects of studies with blinding of observers, studies using an intention-to-treat analysis, studies of only female participants, and studies of Vietnam veterans.

**Results of the review**
Thirty-eight RCTs (total number of participants was unclear) were included in the review.

- Trauma-focused CBT versus waiting list or usual care (15 studies, n=763): persistence of PTSD diagnosis was significantly lower in the groups treated with trauma-focused CBT (RR 0.44, 95% CI: 0.35, 0.57).

- EMDR versus waiting list or usual care (6 studies, n=217): persistence of PTSD diagnosis was significantly lower in the groups treated with EMDR (RR 0.49, 95% CI: 0.28, 0.86).

- Stress management versus waiting list or usual care (4 studies, n=121): persistence of PTSD diagnosis was significantly lower in the groups treated with stress management (RR 0.64, 95% CI: 0.47, 0.87).

- Trauma-focused CBT versus stress management (6 studies, n=284): persistence of PTSD diagnosis was significantly lower in the groups treated with trauma-focused CBT (RR 0.78, 95% CI: 0.61, 0.99).

- Trauma-focused CBT versus other therapies (5 studies, n=286): persistence of PTSD diagnosis was significantly lower in the groups treated with trauma-focused CBT (RR 0.71, 95% CI: 0.56, 0.89).

- EMDR versus other therapies (1 study, n=67): persistence of PTSD diagnosis was significantly lower in the group treated with EMDR (RR 0.40, 95% CI: 0.19, 0.84).

There was no statistically significant difference between therapies in the following comparisons: other therapies versus waiting list; group CBT versus waiting list; EMDR versus trauma-focused CBT; EMDR versus stress management; stress management versus other therapies; group trauma-focused CBT versus group CBT.

Results were also reported for clinician-rated and self-rated PTSD symptoms, and for depression and anxiety. None of the studies reported tolerability.

**Authors' conclusions**
The first-line psychological treatment for PTSD should be trauma-focused CBT or EMDR.
CRD commentary
The review question and inclusion criteria were clear. The authors searched a number of relevant databases and made attempts to identify unpublished studies. This reduces the likelihood that some relevant studies were not included in the review. However, only studies with an English abstract were eligible for inclusion, which might have increased the possibility of language bias. The authors used appropriate methods to minimise bias and error in the study selection, validity assessment and data extraction processes. Although the authors stated that a validity assessment was carried out, the results of this assessment were not reported; this makes it difficult to assess the implications of the assessment for the review conclusions.

The decision to employ meta-analysis with appropriate use of subgroups and sensitivity analyses appears reasonable. This was a well-conducted review and the authors’ conclusions generally reflect the evidence included in the review. However, as the authors themselves stated, the small sample sizes and methodological problems of some of the included studies should be borne in mind.

Implications of the review for practice and research
Practice: The authors stated that the first-line psychological treatment for PTSD should be trauma-focused CBT or EMDR.

Research: The authors stated that further well-designed studies, including comparison studies of different psychological treatments and direct comparisons between psychological and pharmacological therapies, are required, and also large-scale studies in real practice. They also stated that future trials should consider adverse events and tolerability of treatment in more detail.

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