A multidimensional meta-analysis of psychotherapy for PTSD
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CRD summary
This review, which assessed the evidence on psychotherapy for treating post-traumatic stress disorder (PTSD), concluded that although a variety of treatments are highly effective in randomised trials, the results may not be generalisable to the treatment of PTSD in the community. The review had a number of methodological and reporting limitations, and the authors' conclusions may not be reliable.

Authors' objectives
To assess the evidence on psychotherapy for treating post-traumatic stress disorder (PTSD), focusing on trial design features that influence efficacy and generalisability.

Searching
To identify studies published between 1980 and 2003, PsycINFO and MEDLINE were searched using the reported search terms. Further studies were located through handsearches of 19 relevant journals, and from prior meta-analyses and reviews. Only studies published in the English language were sought.

Study selection
Study designs of evaluations included in the review
Only randomised trials with at least 10 participants in each experimental group were eligible for inclusion.

Specific interventions included in the review
Studies comparing any specific psychotherapeutic treatment for PTSD with a control condition or an alternative credible psychotherapeutic treatment were eligible for inclusion. The most commonly used treatments in the included studies were exposure-based therapies, cognitive-behaviour therapy (CBT) with or without exposure, and eye movement desensitisation and reprocessing. Most of the studies compared treatment with a waiting-list or minimal contact control group, or a supportive control group receiving some form of professional attention (including process-oriented therapy, supportive therapy, and relaxation or biofeedback). The length of treatment ranged from 3 to 52 hours.

Participants included in the review
Studies of adults with PTSD were eligible for inclusion. The included studies involved adult participants who had experienced a variety of trauma types (motor vehicle accident, combat, police work, childhood sexual or physical abuse, adult sexual or physical assault, and crime).

Outcomes assessed in the review
The studies were required to use a validated self-report measure of PTSD symptoms, or a validated structured interview performed by an evaluator blinded to the treatment condition. The included studies used 11 different measures of PTSD symptoms.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Two reviewers extracted the data independently. Effect sizes (Cohen's d) were extracted for each study for both pre-versus post-treatment and treatment versus control condition. Where possible, these were calculated from the raw data. Where both a valid self-report measure and an interview assessment were reported, only the self-report measure was used. Where multiple measures were reported, these were aggregated to a single effect size. Other extracted information included the proportion of participants meeting PTSD criteria at the end of treatment and the post-treatment symptom level, for all participants who entered treatment and for all completers.

Methods of synthesis
How were the studies combined?
The studies were combined to give pooled effect sizes with 95% confidence intervals (CIs). The methods used for this meta-analysis were not stated, although the pooled effect sizes appeared to be unweighted means.

How were differences between studies investigated?
As well as pooling all active treatments together, separate analyses were performed for the different treatment types. Heterogeneity was assessed using the Q statistic, and the following variables were investigated as potential moderators of effect size: year of publication, sample size, quality of diagnosis, number of exclusion criteria, exclusion rate, completion rate and type of trauma.

Results of the review
Twenty-six studies, involving 1,535 participants in total, were included.

Across all treatments, the mean effect size for pre- versus post-treatment comparisons was 1.43 (95% CI: 1.23, 1.64), indicating that psychotherapy had a statistically significant effect when comparing PTSD symptoms before and after treatment. However, there was no significant effect when comparing patients who had psychotherapy with a waiting-list control group or supportive control group: for active versus wait-list control treatment the mean effect size was 1.11 (95% CI: 0.76, 1.47), while for treatment versus supportive control it was 0.83 (95% CI: 0.53, 1.12). Significant heterogeneity was detected in all three of these analyses.

A series of sensitivity analyses suggested that there was no significant difference in the efficacy of the different treatment types (exposure, CBT, exposure plus CBT, eye movement desensitisation and processing).

The analysis of potential moderators of effect size suggested that year of publication and number of exclusion criteria were positively related to effect size, whereas completion rate had a negative relationship with effect size. The type of trauma also appeared to have an impact on the effect size. All of these analyses were considered to be preliminary as most were underpowered.

Across all treatments, 56% (95% CI: 50, 61) of all those who entered treatment no longer met PTSD criteria post-treatment and 44% (95% CI: 37, 51) were classified as improved.

Authors' conclusions
The authors appeared to conclude that although a variety of psychotherapy treatments for PTSD were highly effective in randomised trials, there are limitations to the available research and the results may not be generalisable to the treatment of PTSD in the community.

CRD commentary
The inclusion criteria were clearly defined, and several sources were used to locate relevant studies. However, language and publication biases might exist since only studies published in English were included. The data extraction was performed by two reviewers independently, which should have minimised the introduction of errors and bias at this point, but it was unclear whether similar steps were taken at the other stages of the review. Although details of the individual studies were provided, study quality was not assessed.

The studies were combined using meta-analysis, but it is difficult to judge whether the methods used were appropriate
as they were not described clearly. The results for comparisons with control groups were only reported for all treatment groups combined, a grouping that was both clinically and statistically heterogeneous. These results are therefore unlikely to be reliable. Differences between the studies were investigated, but again the methods used were not clearly described. Given the limitations of this review, the authors’ conclusions may not be reliable.

**Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors stated that future research should avoid exclusion criteria that would not be used in practice, should avoid waiting list and other relatively inert control conditions, and should involve at least 2 years’ follow-up.

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