A systematic review on the effectiveness of cognitive behavioral therapy for posttraumatic stress disorder
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CRD summary
The review concluded that specific therapies such as cognitive behavioural therapy, exposure therapy and cognitive therapy were equally effective in the treatment post-traumatic stress disorder, and that these therapies were more effective than supportive techniques. Overall, the review may have been vulnerable to several important biases, so the authors' conclusions should be treated with caution.

Authors' objectives
To determine the efficacy of cognitive behavioural therapy compared to other psychotherapy techniques for the treatment of post-traumatic stress disorder.

Searching
MEDLINE, EMBASE, LILACS and the Cochrane Library were searched for studies published between 1980 and 2005. Search terms were reported. Reference lists of retrieved articles, recently published textbooks and review articles were also searched.

Study selection
Randomised controlled trials (RCTs), of defined clinical duration, that compared cognitive behavioural therapy for the treatment of post-traumatic stress disorder in adults with other treatments and waiting list controls, were eligible for inclusion. To be included participants with post-traumatic stress disorder had to meet criteria defined by DSM-III, DSM-III-R and DSM-IV (Diagnostic and Statistical Manual of mental disorders). The main outcomes of interest were remission, clinical improvement, drop-out rates and changes in symptoms.

The majority of the included trials used prolonged individual cognitive behavioural therapy (more than four sessions); the remaining studies used brief individual cognitive behavioural therapy (four or less sessions), group cognitive behavioural therapy or group cognitive behavioural therapy combined with two individual sessions. Comparison groups included eye movement desensitisation and reprocessing, supportive therapy (including relaxation, counselling and psycho-education), exposure therapy, cognitive therapy and waiting list. Participants within the included trials had experienced sexual aggression, sexual or non-sexual assault, childhood abuse, physical injury or natural disasters. Some participants were war refugees or war veterans.

Two reviewers independently selected studies for inclusion. Disagreements were resolved through discussion.

Assessment of study quality
Validity was assessed using the Jadad scale (maximum 5 points). Only trials scoring 2 or more points, with drop-out rates of less than 30%, were included in the review.

Two reviewers independently assessed validity and losses to follow-up.

Data extraction
Data were extracted and used to calculate relative risk (RR) and 95% confidence intervals (CI) for remission, improvement and drop-out rates. Mean differences and 95% confidence intervals were calculated for differences in post-treatment symptoms between groups.

It appeared that data were extracted independently by two reviewers, with disagreements resolved through discussion.
Methods of synthesis
Trials were grouped by comparison and pooled relative risks and weighted mean differences (WMD) together with 95% confidence intervals were calculated using a random-effects model. Heterogeneity was assessed using the $\chi^2$ test. Some analyses were conducted on an intention-to-treat (ITT) basis. Trials that reported lack of information on remission rates, clinical improvement or drop-out rates were excluded from the review.

Results of the review
Twenty-three RCTs (n=1,923 participants) were included in the review.

Significantly higher remission rates were reported for cognitive behavioural therapy than eye movement desensitisation and reprocessing (RR 0.35, 95% CI 0.16 to 0.79; two RCTs, n=54 participants) or supportive therapies (RR 0.43, 95% CI 0.25 to 0.74; three RCTs, n=188 participants) for participants completing trials. Significant heterogeneity was reported for the comparison of cognitive behavioural therapy with eye movement desensitisation and reprocessing ($p=0.04$).

There were no statistically significant differences between cognitive behavioural therapy versus exposure therapy (three RCTs, n=156 participants) for remission rates, or cognitive behavioural therapy versus cognitive therapies (two RCTs, n=78 participants) for clinical improvement.

There were no statistically significant differences in drop-out rates between cognitive behavioural therapy versus eye movement desensitisation and reprocessing (two RCTs, n=56 participants), supportive therapies (six RCTs, n=359 participants), exposure therapy (five RCTs, n=286 participants) or cognitive therapy (two RCTs, n=99 participants).

Authors stated that heterogeneity prevented them reporting data on cognitive behavioural therapy compared with waiting list.

Authors’ conclusions
The findings suggested that specific therapies such as cognitive behavioural therapy, exposure therapy and cognitive therapy were equally effective in the treatment of post-traumatic stress disorder, and that these therapies were more effective than supportive techniques.

CRD commentary
The review question was clear and supported by detailed inclusion criteria. Several relevant sources were searched, but it was unclear whether language restrictions were applied. Only published studies were included in the review, so there was a risk of publication bias. Appropriate methods were used to reduce reviewer errors and bias in the selection of studies, assessment of validity and extraction of data. Validity was assessed using appropriate methods, but results of the assessment were not reported. Trials were combined in a meta-analysis and heterogeneity was reported. However, given differences between trials in terms of treatment/control modalities and trial population, combining data in a meta-analysis may not have been appropriate. The majority of the pooled results were only based on two or three trials and included only a small number of participants, so may not be reliable. Overall, the review may have been vulnerable to several important biases, so the authors’ conclusions should be treated with caution.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that further controlled comparative studies are required, with large sample sizes and using robust methodology, to confirm the benefit of cognitive behavioural therapy. Further research should also investigate interactions between modality of treatment and specific study populations.

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