Psychological treatment of post-traumatic stress disorder (PTSD) (Review)

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ABSTRACT

Background
Psychological interventions are widely used in the treatment of post-traumatic stress disorder (PTSD).

Objectives
To perform a systematic review of randomised controlled trials of all psychological treatments except eye movement desensitisation and reprocessing following the guidelines of the Cochrane Collaboration.

Search strategy
Systematic searches of computerised databases, hand search of the Journal of Traumatic Stress, searches of reference lists, known websites and discussion fora, and personal communication with key workers.

Selection criteria
Types of studies - Any randomised controlled trial of a psychological treatment.

Types of participants - Adults suffering from traumatic stress symptoms for three months or more.

Types of interventions - Trauma-focused cognitive behavioural therapy/exposure therapy (TFCBT); stress management (SM); other therapies (supportive therapy, non-directive counselling, psychodynamic therapy and hypnotherapy); group cognitive behavioural therapy (group CBT).

Types of outcomes - Severity of clinician rated traumatic stress symptoms. Secondary measures included self-reported traumatic stress symptoms, depressive symptoms, anxiety symptoms, adverse effects and dropouts.

Data collection and analysis
Data was entered using the Review Management software. Quality assessments were performed. The data were analysed for summary effects using the RevMan 4.2 programme.

Main results
Twenty-nine studies were included in the review. With regards to reduction of clinician assessed PTSD symptoms TFCBT did significantly better than waitlist/usual care (standardised mean difference (SMD) = -1.36; 95% CI, -1.88 to -0.84; 13 studies; n = 609). There was no significant difference between TFCBT and SM (SMD = -0.27; 95% CI, -0.71 to 0.16; 6 studies; n = 239). TFCBT did significantly better than other therapies (SMD = -0.81; 95% CI, -1.19 to -0.42; 3 studies; n = 120). Stress management did significantly better than waitlist/usual care (SMD = -1.14; 95% CI, -1.62 to -0.67; 3 studies; n = 86) and than other therapies (SMD = -1.22; 95% CI, -2.09 to -0.35; 1 study; n = 25). There was no significant difference between other therapies and waitlist/usual care control (SMD = -0.43; 95% CI, -0.90 to 0.04; 2 studies; n = 72). Group TFCBT was significantly better than waitlist/usual care (SMD = -0.72; 95% CI, -1.14 to -0.31).

Authors' conclusions
There was evidence that individual TFCBT, stress management and group TFCBT are effective in the treatment of PTSD. Other non-trauma focused psychological treatments did not reduce PTSD symptoms as significantly. There was some evidence that individual

TFCBT is superior to stress management in the treatment of PTSD at between 2 and 5 months following treatment, and also that TFCBT was also more effective than other therapies. There was insufficient evidence to determine whether psychological treatment is harmful. There was some evidence of greater drop-out in active treatment groups.

SYNOPSIS

Psychological treatments can reduce symptoms of post traumatic stress disorder (PTSD). Trauma focused treatments are more effective than non-trauma focused treatments.

This review concerns the efficacy of psychological treatment (excluding eye movement desensitisation and reprocessing) in the treatment of PTSD. There is evidence that individual trauma focused cognitive-behavioural therapy (TFCBT), stress management and group TFCBT are effective in the treatment of PTSD. Other non-trauma focused psychological treatments did not reduce PTSD symptoms as significantly. There is some evidence that individual TFCBT is superior to stress management in the treatment of PTSD at between 2 and 5 months following treatment, and also that TFCBT was also more effective than other therapies. There is insufficient evidence to show whether or not psychological treatment is harmful. Trauma focused cognitive behavioural therapy should be considered in individuals with PTSD.

BACKGROUND

Post-traumatic stress disorder (PTSD) is a well recognised psychiatric disorder that occurs following a major traumatic event. Characteristic symptoms include re-experiencing phenomena such as nightmares and recurrent distressing thoughts of the event, avoidance and numbing of general responsiveness such as trying not to talk about or be reminded of the traumatic event, experiencing detachment and estrangement from other people and hyperarousal symptoms including sleep disturbance, increased irritability and hypervigilance. PTSD is a relatively common condition. The National Co-morbidity Survey (Kessler 1995) found that 7.8% of 5,877 American adults had suffered from PTSD at some time in their lives. When data were examined from individuals who had been exposed to a traumatic event rates of PTSD varied according to type of stressor. For example, physical assaults amongst women led to a lifetime prevalence of 29% and combat experience amongst men to a lifetime prevalence of 39%. It is apparent that PTSD causes much suffering and that developing effective interventions is important.

Psychological interventions have been advocated as being effective in the treatment of PTSD since its conception. Various forms of psychological treatment have been used including exposure therapy, cognitive therapy, stress inoculation training, psychodynamic psychotherapy and eye movement desensitisation and reprocessing (EMDR) (Foa 2000). Exposure therapy usually involves asking the subject to relive the trauma imaginally. This is often done by creating a detailed present tense account of exactly what happened, making an audio tape recording of it and asking the individual to listen to this over and over again. Another form of exposure therapy involves exposing subjects to cues associated with the traumatic event (for example graded re-exposure to car travel following a road traffic accident). Trauma-focused cognitive therapy involves helping the individual to identify distorted thinking patterns regarding themselves, the traumatic incident and the world. Individuals are encouraged to challenge their thoughts by weighing up available evidence and through the utilization of various techniques by the therapist including specific questioning that leads the individual to challenge distorted views. Psychodynamic psychotherapy focuses on integrating the traumatic experience into the life experience of the individual as a whole. Often childhood issues are felt to be important.

The psychological treatments described and a variety of others have their advocates, but much of this advocacy is based on anecdotal evidence only. All the treatments have a theoretical basis as to why they might work, but their true effectiveness in reducing symptoms or their potential adverse consequences is not really known. Solomon 1992 reviewed the treatment literature and concluded that most of the available studies had some methodological shortcomings and that there was a need for further evaluation. A more recently published meta-analysis included more randomised controlled trials (Sherman 1998) and practice guidelines from the International Society for Traumatic Stress Studies (Foa 2000) added to these. However, this topic has not yet been subjected to a systematic review adhering to the Cochrane Collaboration guidelines.

OBJECTIVES

To perform a systematic review of randomised controlled trials of psychological treatments (excluding EMDR - see published note) for PTSD following the guidelines of the Cochrane Collaboration. The efficacy of psychological treatments in comparison with

control conditions and other psychological treatments will be determined using clinician rated symptoms of PTSD as the main outcome measure.

CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

Types of studies

Any randomised controlled trial that considered one or more defined psychological treatments to reduce traumatic stress symptoms (excluding EMDR - see published note) in comparison with a placebo, other control (e.g. usual care or waiting list control) or alternative psychological treatment condition was included. All studies must have been completed and analysed by October 2004 for inclusion. Sample size, language and publication status was not used to determine whether or not a study should be included.

Types of participants

Any individual suffering from traumatic stress symptoms with a duration of symptoms of three months or more. At least 70% of participants had to be diagnosed as suffering from PTSD according to DSM or ICD criteria This review considered studies of adults only. There was no restriction on the basis of severity of PTSD symptoms, type of traumatic event or comorbidity, however, PTSD had to be considered the primary diagnosis for individuals to be included.

Types of intervention

This review considered any psychological treatment designed to reduce symptoms of PTSD (with the exception of EMDR - see published note). Other Cochrane Collaboration reviews have considered brief psychological interventions for treating immediate trauma-related symptoms and preventing PTSD (Rose 2004) and pharmacological treatments for the treatment of PTSD (Stein 2004).

The following eligible treatment categories were identified.

a. Trauma focused cognitive behavioural therapy (TFCBT) - Any psychological treatment that predominantly used trauma focused cognitive, behavioural or cognitive-behavioural techniques. This category included exposure therapy.
b. Stress management/relaxation - Any psychological treatment that predominantly used non-trauma focused cognitive, behavioural or cognitive-behavioural techniques.
c. TFCBT Group Therapy - Any approach delivered in a group setting that predominantly used trauma focused cognitive, behavioural or cognitive-behavioural techniques.
d. Non-trauma focused CBT group therapy - Any approach delivered in a group that predominantly used non-trauma focused cognitive, behavioural or cognitive-behavioural techniques.
e. Other psychological treatment - Any psychological treatment that predominantly used non-trauma focused techniques that would not be considered cognitive, behavioural or cognitive-behavioural techniques. This category included non-directive counselling, psychodynamic therapy and hypnotherapy.

Types of outcome measures

Categorical and continuous variables were used:

Primary outcome measure:

1. The primary outcome measure was severity of clinician rated traumatic stress symptoms using a standardised measure such as the Clinician Administered PTSD Symptom Scale (Blake 1995).

Secondary outcome measures:

1. Severity of self-reported traumatic stress symptoms using a standardised measure such as the Impact of Event Scale (Horowitz 1979).
2. Severity of depressive symptoms using scales such as the Beck Depression Inventory (Beck 1961).
3. Severity of anxiety symptoms using scales such as the Spielberger State Trait Anxiety Inventory (Spielberger 1973).

Other outcome measures:

1. Dropout rates.
2. PTSD diagnosis after treatment.
3. Any adverse effects, e.g. increased PTSD symptoms.

SEARCH STRATEGY FOR IDENTIFICATION OF STUDIES

See: Depression, Anxiety and Neurosis Group search strategy

This involved a systematic review of a variety of sources using methods described by the Cochrane Collaboration. Computerised databases were searched using the Cochrane optimal RCT search strategy combined with the following key words: PTSD, trauma, cognitive, behavioural, exposure, EMDR, psychological, psychotherapy, psychodynamic, stress inoculation, relaxation, anxiety management.

Databases - Medline, clinpsych, psychlit, Embase, Pilots (a specialized PTSD database maintained by the National PTSD Centre in the USA), Trials Register of the Cochrane Depression, Anxiety and Neurosis Group, lilacs, psynebs, sociofile.

Hand Searches - Journal of Traumatic Stress, ISTSS Treatment Guidelines (Foa 2000)

Reference Lists - of studies identified in search

Internet Search - Of known websites and discussion fora

Personal Communication - The main source of personal communication was with the NICE guidelines development group who kindly shared the results of their searches and communications with the following people: Arnoud Arntz &

Merel Kindt, Richard Bryant, Willi Butollo, Claude Chemtob, Judith Cohen, Mark Creamer, Jonathan Davidson, Enrique Echeburua, Paul Emmelkamp, Edna Foa, Chris Freeman, Berthold Gersons, Louise Humprheys, Terry Keane, Dean Kilpatrick, Edward Kubany, Brett Litz, Andreas Maercker, Charles Marmar, Sandy McFarlane, Thomas Mellman, Lars-Goran Öst, Michael Otto, Roger Pitman, Mark Pollack, Patti Resick, David Riggs, Sue Rose, Barbara Rothbaum, Joe Ruzek, Patricia White, Paula Schnurr, Matt Friedman, Arieh Shalev, Dan Stein, Nick Tarrier, Agnes van der Minnen, Simon Wessely, Rachel Yehuda.

Abstracts/Dissertations - from meetings of the European and International Societies of Traumatic Stress Studies.

METHODS OF THE REVIEW

Applying selection criteria - Abstracts of all potential trials identified through the search strategy were independently read by the two reviewers. If an abstract was felt to possibly represent a RCT the full report was fully read by each reviewer independently to determine if the trial met the inclusion criteria.

Extracting data - Spreadsheets were designed to capture data which was then entered using the Review Management software. Information extracted included demographic details of participants, details of the traumatic event, the randomisation process, the interventions used and outcome data.

Assessment of methodological quality - This combined the standard approach described in the Cochrane Handbook which considers randomisation, allocation concealment and intention to treat with a quality score from a predetermined scale (Moncrieff 2001). This scale considers 23 different methodological criteria and assigns scores to them on a 0-2 scale giving a maximum possible total of 46. The criteria included in the scale are objectives and specification of main outcomes a priori, sample size, follow up duration, power calculation, method of allocation, allocation concealment, clear description of treatment and adjunctive treatment, blinding of subjects, representative sample recruitment, use of diagnostic criteria, exclusion criteria and number of exclusions and refusals, description of sample demographics, blinding of assessor, assessment of compliance with treatments, details of side-effects, record of number and reasons for withdrawal by group, outcome measures described clearly or use of validated instruments, information on comparability and adjustment for differences in analysis, inclusion of withdrawals in analysis, presentation of results with inclusion of data for reanalysis of main outcomes, appropriate statistical analysis, conclusions justified and declaration of interests.

The Cochrane criteria and other scale were scored by both reviewers independently. Disagreements were discussed between the reviewers in order to make a final decision regarding the quality score of the study.

Analyses

The following information about the identified trials was presented:
1. Included RCTs and their year of publication.
2. Excluded studies with reason for exclusion.
3. The characteristics of participants.
4. The nature of the psychological treatment and control condition considered.
5. The methodological quality of the RCTs using the methods described above.
6. The pooled effects of the overall effects in individual trials.

The following tables were presented:
1. A table of characteristics of the RCTs included in the review.
2. A table summarising the methodological quality of the RCTs included in the review.

Calculation of treatment effects:
The data were summarised and pooled effects calculated using RevMan 4.1software. Continuous outcomes were analysed as standardised mean differences (SMDs) to allow for ease of comparison across studies. It was decided to use relative risk as the main categorical outcome measure as this is more widely understood than odds ratios in medical practice.

Choice of Method for Pooling Data
Data were pooled from more than one study using a fixed effects meta-analysis, except where heterogeneity was present in which case a random-effects model was used as described below.

Heterogeneity
To check for heterogeneity between studies, both the I squared test of heterogeneity and the chi-squared test of heterogeneity ($p < .10$), as well as visual inspection of the forest plots were used. An I squared of less than 30% was taken to indicate mild heterogeneity and a fixed effects model was used to synthesise the results. An I squared of more than 50% was taken as notable heterogeneity. In this case, an attempt was made to explain the variation. If studies with heterogeneous results were found to be comparable, a random effects model was used to summarise the results. An I squared of 30% to 50% was taken to indicate moderate heterogeneity. In this case, both the chi-squared test of heterogeneity and a visual inspection of the forest plot were used to decide between a fixed and random effects model.
Clinical heterogeneity subgroup analyses were performed for studies that only included females and studies that did not include Vietnam veterans for the primary outcome comparison of TFCBT vs wait list/usual care. All trials that scored above 25 on the Moncrieff 2001 scale were considered "higher quality studies". Studies that scored below 26 on the Moncrieff 2001 scale were considered "lower quality studies". Sensitivity analyses were performed for higher quality studies and lower quality studies.

DESCRIPTION OF STUDIES

Trials excluded

See excluded trials table.

Studies were excluded if they did not satisfy the inclusion criteria. All studies involving EMDR only were excluded. Other reasons for excluding specific studies were less than three months following trauma and therefore PTSD had not been present for three months or more (Echeburua 1996; Frank 1988), treatment for anger only (Chemtob 1997), relaxation treatments only with no comparison (Walsh) and comparison of two CBT techniques only (Tarrier 1999; Paunovic 2001).

Trials included

See included trials table

Twenty-six different trials fulfilled the inclusion criteria.

Patient selection

See characteristics of trials included.

The study populations were varied and not directly comparable (i.e. there was significant clinical heterogeneity). Five studies included male Vietnam veterans only (Carlson 1998, Cooper 1989, Keane 1989, Peniston 1991 and Schnurr 2003), ten studies considered female assault (mainly sexual assault) survivors (Classen 2001, Cloitre 2002, Echeburua 1997, Foa 1991, Foa 1999, Krakow 2001, Kubany 2003, Kubany 2004, Resick 2002 and Zlotnick 1997), two studies included only road traffic accident survivors (Blanchard 2003 and Fecteau 1999), one study was of refugees (Neuner 2004), one of police officers (Gersons 2000) and six studies included individuals from various traumas including road traffic accidents, assaults, bereavement and industrial accidents (Brom 1989, Bryant 2003, Ehlers 2003, Marks 1998, Power 2002 and Vaughan 1994). The majority of participants satisfied the criteria for a DSM diagnosis of PTSD although some studies included individuals with traumatic stress symptoms who did not fulfil the full DSM criteria. The Vietnam veteran studies were largely from samples of individuals already in care. Other studies often advertised for their participants or used referrals to an established traumatic stress service.

Cultural Setting:

United States of America (17 studies), Australia (2 studies), United Kingdom (3 studies), The Netherlands (2 studies), Germany (1 study) and Canada (1 study).

Sample size:

The number of patients randomised to the trials ranged from 16 (Cooper 1989 and Peniston 1991) to 360 (Schnurr 2003). Four studies included sample sizes of over 100 (Schnurr 2003 (360), Resick 2002 (121), Krakow 2001 (114) and Brom 1989 (112)).

Time post Trauma:

All studies included individuals at least three months following the trauma. The range was large , from three months to over 30 years. There was often a wide range of times since trauma included in individual studies.

Interventions:

In order to present the results in a meaningful way it was decided to pool data that used a similar theoretical methodology. This resulted in the establishment of seven groups - TFCBT, stress management, trauma focused group CBT, non-trauma focused group CBT, psychodynamic therapy, hypnotherapy and supportive counselling. Because of the existence of only one trial in each of the last three groups it was decided to pool these as "other therapies" for the purposes of this review.

Trauma focused cognitive behavioural therapy - Twenty-one studies considered TFCBT - Blanchard 2003, Brom 1989, Bryant 2003, Cloitre 2002, Cooper 1989, Echeburua 1997, Ehlers 2003, Fecteau 1999, Foa 1991, Foa 1999, Gersons 2000, Keane 1989, Kubany 2003, Kubany 2004, Marks 1998, Neuner 2004, Peniston 1991, Power 2002, Resick 2002, Taylor 2003 and Vaughan 1994.

Stress management - Seven studies considered stress management - Carlson 1998, Echeburua 1997, Foa 1991, Foa 1999, Marks 1998, Taylor 2003 and
Vaughan 1994.

Group trauma focused CBT - Four studies considered group trauma focused CBT - Classen 2001, Krakow 2001, Schnurr 2003 and Zlotnick 1997.

Other therapies - Four studies considered other therapies - Blanchard 2003, Brom 1989, Bryant 2003 and Foa 1991.

Comparisons:

The included trials compared (i) psychological treatment vs waitlist or usual care control (some studies allowed the control group to receive pharmacological treatments and/or psychological treatments that were not being considered specifically); (ii) psychological treatment vs other psychological treatment.

The following specific comparisons were made:

a. TFCBT versus waitlist/usual care - Blanchard 2003, Brom 1989, Cloitre 2002, Cooper 1989, Ehlers 2003, Fecteau 1999, Foa 1991, Foa 1999, Gersons 2000, Keane 1989, Kubany 2003, Kubany 2004, Marks 1998, Peniston 1991, Power 2002, Resick 2002 and Vaughan 1994.

b. Stress management versus waitlist/usual care - Carlson 1998, Foa 1991, Foa 1999 and Vaughan 1994.

c. Other therapies versus waitlist/usual care - Blanchard 2003, Brom 1989 and Foa 1991.

d. Group CBT versus waitlist/usual care - Classen 2001, Krakow 2001 and Zlotnick 1997.

e. TFCBT versus stress management - Echeburua 1997, Foa 1991, Foa 1999, Marks 1998, Taylor 2003 and Vaughan 1994.

f. TFCBT versus other therapies - Blanchard 2003, Brom 1989, Bryant 2003, Foa 1991 and Neuner 2004.

g. Stress management versus other therapy - Foa 1991.

h. Group TFCBT versus group non trauma focused CBT - Schnurr 2003.

METHODOLOGICAL QUALITY

Randomisation
Most studies did not provide full details of the method of allocation and some bias was felt to be possible from the description in 20 studies. In six studies the method of allocation was felt to be appropriate with no bias possible (Bryant 2003, Schnurr 2003, Krakow 2001, Marks 1998, Resick 2002 and Vaughan 1994).

Allocation concealment
Most studies did not provide full details of the method of randomisation and therefore concealment was unclear in 19 studies (Blanchard 2003, Brom 1989, Bryant 2003, Carlson 1998, Classen 2001, Cloitre 2002, Echeburua 1997, Ehlers 2003, Foa 1999, Gersons 2000, Keane 1989, Kubany 2004, Marks 1998, Peniston 1991, Resick 2002, Schnurr 2003, Taylor 2003, Vaughan 1994, Zlotnick 1997). There was evidence of adequate concealment in the Power 2002 study. In six studies randomisation concealment was inadequate (Cooper 1989, Fecteau 1999, Foa 1991, Krakow 2001, Kubany 2003, Neuner 2004).

Blinding
In common with all studies of psychological treatment a double blind methodology is virtually impossible as it is clear to the subject what treatment they are receiving. However, a well designed study should have ensured blinding of the assessor of outcome measures. This was performed in 18 studies (Blanchard 2003, Bryant 2003, Cloitre 2002, Ehlers 2003, Fecteau 1999, Foa 1999, Gersons 2000, Krakow 2001, Kubany 2003, Kubany 2004, Marks 1998, Neuner 2004, Peniston 1991, Power 2002, Resick 2002, Schnurr 2003, Taylor 2003, Vaughan 1994) but not present in the other studies. In no studies was the blinding complimented by a test for the integrity of it.

Loss to follow-up
This was fully reported with reasons by group in nine studies (Blanchard 2003, Ehlers 2003, Fecteau 1999, Gersons 2000, Krakow 2001, Neuner 2004, Peniston 1991, Taylor 2003, Vaughan 1994). In one study this was not recorded (Keane 1989). In the other studies withdrawals were recorded without reasons by group.

Moncrieff et al (2001) assessment:
The scores for each item and total scores for all the studies are shown in the methodological quality table. It is important to view the items separately. It is likely that some studies with higher scores had significant methodological shortcomings but there does appear to be a correlation between higher scores on the scale and better methodology. The overall quality of the studies was variable. Several studies had significant flaws as is illustrated by the table. One trend was that the earlier studies tended to have lower quality scores than the more recent ones. Fifteen studies had a score of 26 or more including 12 of the 14 studies published in the 21st century. Eleven studies scored below 25 including all four studies published in the 1980s. Only two studies (Krakow 2001, Schnurr 2003) scored over 30.

There was rarely any measure of treatment fidelity and only one study (Taylor 2003) provided details of any side effects of treatment although this was only information regarding worsening of specific symptoms on the main outcome measure. In several studies the conclusions were only partially justified from the results obtained. A strength of the majority of the studies was having clear objectives but sample sizes were small and the follow-up period was limited. Thirteen studies had follow-up periods of six months or more (Bryant 2003, Carlson 1998, Classen 2001, Echeburua 1997, Foa 1999, Krakow 2001, Kubany 2004, Marks 1998, Neuner 2004, Peniston 1991, Power 2002, Resick 2002, Schnurr 2003). Power calculations were rarely reported and it is apparent that many of the studies were underpowered. The treatments delivered were reasonably well described although there was limited testing of treatment fidelity. The majority of studies used well validated outcome measures although there was considerable variation in the actual measures used.

TFCBT

The TFCBT study scores ranged from 17 (Brom 1989) to 29 (Bryant 2003, Foa 1999, Marks 1998, Neuner 2004, Resick 2002). The overall quality was variable and has been further explored in a sensitivity analysis reported in the results section.

There were several specific aspects of individual studies that need to be considered when interpreting the results. Blanchard 2003 included individuals with "severe sub-syndromal PTSD" defined as individuals who did not fully meet either the re-experiencing, avoidance or hyperarousal criteria but did meet all other DSMIV criteria. In the Brom 1989 study 83 (74%) had experienced bereavement as the trauma and the period between therapeutic sessions was unclear. As part of the assessment interview "confrontation therapy" was used apparently to determine the reaction to the traumatic event. Clearly this may have affected outcome. In the Cooper 1989 study most individuals finishing the imaginal flooding continued to receive both standard individual and group therapies. Both usual care group and treatment group subjects received a standard component treatment (individual and group) designed for PTSD. This comprised weekly sessions of one hour evaluating symptoms and background of PTSD with an educational component. Two hour weekly group sessions focussed on a number of problem areas including PTSD symptoms using group problem-solving, current life problems and group support. Clearly the usual care group received significant treatment in this study.

Foa 1991 excluded assaults by a spouse or family member. Foa 1999 was one of the best studies methodologically although how subjects were recruited was unclear and the number of drop-outs was not specified. Gersons 2000 too was a well designed study but restricted to male police officers. The types of trauma were not specified although all fulfilled Criterion A of the DSMIV classification of PTSD. Keane 1989 did not describe the severity or type of trauma, nor the time between trauma and study. Treatment and waiting list groups continued to receive medication throughout the trial. An unknown number of the usual care/waiting list control group subjects continued to attend programmes for veterans or to see a psychiatrist and there was no data on the degree of involvement or treatment given in this group during the study. This is likely to have reduced the validity of this study and specifically the ability to detect a difference in effectiveness between the two groups. In common with several of the studies of Vietnam veterans this study appears to have been of men with chronic, probably treatment resistant PTSD symptoms with a relatively poor prognosis and compared an active treatment against a usual care control group who were also receiving significant ongoing treatment.

The Marks 1998 study was quite strong methodologically. Exclusions included those who had had past treatment with cognitive therapy, suggesting a bias in favour of those whose symptomatology or illness may have been less severe and clearly in contrast with the methodology employed in several of the Vietnam veteran studies leading to a likely better outcome. Unfortunately there was a high attrition rate and the later follow-up data were often on very small groups. The Peniston 1991 study suffers from low sample size and chronic Vietnam veteran PTSD sufferers - ten of the sixteen were inpatients. There were no drop-outs and no detail on missed sessions. The Resick 2002 study was very strong methodologically with a large sample size. Ehlers 2003 study was strong methodologically but suffered from a small sample size.

Vaughan's study included individuals from a range of traumas of whom 22% did not satisfy the DSM III R criteria for PTSD. No homework was given in the eye movement desensitisation group whereas the applied muscle relaxation and image habituation therapy groups were required to complete homework

Stress management:
The quality scores of these studies varied from 21 (Vaughan 1994) to 29 (Foa 1999). Issues concerning the Foa 1991, Foa 1999, Marks 1998 and Vaughan 1994 studies have been discussed above. The Carlson 1998 study suffered from a small sample size. In the Echeburua 1997 study outcome assessments were performed by the therapists themselves and the treatment was not manualised.

Other therapies
These studies all included TFCBT as an intervention as well as other therapies. The quality scores varied from 17 (Brom 1989) to 29 (Bryant 2003).

Group TFCBT

The studies of group TFCBT included the two studies with the highest quality scores (Krakow 2001 31, Schnurr 2003 37) and two of the studies that scored least (Zlotnick 1997 18, Classen 2001 20). The Krakow 2001 treatment focused on nightmares and did not specifically deal with other phenomena of PTSD which may have impacted on the results. In the Zlotnick 1997 study the duration of symptoms was not apparent. All subjects were receiving individual psychotherapy in addition to the group intervention and medication was being prescribed throughout . There were seven (29%) drop-outs in the treatment group with no reasons given for dropping out. However those not completing had higher scores on the pre-treatment PTSD symptom scale and the Dissociative Experience Scale. The presence of PTSD at the end of the study was estimated from the Davidson trauma scale questionnaire as opposed to a structured interview post treatment. Schnurr 2003 had the largest sample size of all the studies but unfortunately there was no wait-list or other non-active treatment control group which makes interpretation very difficult.

RESULTS

The full results are contained in the tables and are summarised below.

TFCBT/Exposure therapy versus waitlist/usual care

Clinician rated PTSD symptoms:
Thirteen studies considered this outcome with a total of 609 individuals. There was significant statistical heterogeneity between these trials (Chi square = 86.62; p<0.00001: I square = 86.1%) and a random effects model was used to pool the data. The TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -1.36 (-1.88 to -0.84)).

Self reported PTSD symptoms:
Eight studies considered this outcome with a total of 388 individuals. There was significant statistical heterogeneity between these trials (Chi square = 29.68; p = 0.0001: I square = 76.4%) and a random effects model was used to pool the data. The TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -1.7 (-2.21 to -1.18)).

Depression:
Thirteen studies considered this outcome with a total of 585 individuals. There was significant statistical heterogeneity between these trials (Chi square = 64.91; p<0.00001: I square = 81.5%) and a random effects model was used to pool the data. The TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -1.2 (-1.65 to -0.75)).

Anxiety:

Ten studies considered this outcome with a total of 375 individuals. There was no significant statistical heterogeneity between these trials. The TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.94 (-1.16 to -0.72)).

Adverse effects:
No studies formally considered adverse effects.

Dropouts:
Fourteen studies with a total of 814 individuals recorded whether individuals left the study early for any reason by group. There was no significant statistical heterogeneity between these trials. The TFCBT group did significantly worse than the waitlist/usual care group (RR (95% CI) = 1.47 (1.07, 2.02)).

PTSD diagnosis after treatment:
Fourteen studies with a total of 716 individuals reported this outcome. There was significant statistical heterogeneity between these trials (Chi square = 49.90; p<0.00001: I square = 73.9%) and a random effects model was used to pool the data. The TFCBT group did significantly better than the waitlist/usual care group (RR (95% CI) = 0.47 (0.37, 0.59)).

Stress management versus waitlist/usual care:

Clinician rated PTSD symptoms:
Three studies considered this outcome with a total of 86 individuals. There was no significant statistical heterogeneity between these trials. The stress management group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -1.14 (-1.62 to -0.67)).

Self reported PTSD symptoms:
One study considered this outcome with a total of 24 individuals. There was no statistically significant difference between the stress management group and the waitlist/usual care group immediately after treatment (SMD (95% CI) = 0.33 (-0.47 to 1.14)).

Depression:
Four studies considered this outcome with a total of 109 individuals. There was no significant statistical heterogeneity between these trials. The stress management group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.73 (-1.12 to -0.33)).

Anxiety:
Three studies considered this outcome with a total of 82 individuals. There was no significant statistical heterogeneity between these trials. The stress management group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.77 (-1.23 to -0.31)).

Adverse effects:
No studies formally considered adverse effects.

Dropouts:
Four studies with a total of 121 individuals recorded whether individuals left the study early for any reason by group. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the stress management group and the waitlist/usual care group (RR (95% CI) = 2.19 (0.71, 6.73)).

PTSD diagnosis after treatment:
Three studies with a total of 121 individuals reported this outcome. There was significant statistical heterogeneity between these trials (Chi square = 8.63; p = 0.03: I square = 65.2%) and a random effects model was used to pool the data. The stress management group did significantly better than the waitlist/usual care group (RR (95% CI) = 0.64 (0.47, 0.87)).

Other therapies versus waitlist/usual care:

Clinician rated PTSD symptoms:
Two studies considered this outcome with a total of 72 individuals. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the other therapies group and the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.43 (-0.9 to 0.04)).

Self reported PTSD symptoms:
Two studies considered this outcome with a total of 132 individuals. There was no significant statistical heterogeneity between these trials. The other therapies group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.61 (-0.98 to -0.24)).

Depression:
Two studies considered this outcome with a total of 72 individuals. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the other therapies group and the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.25 (-0.71 to 0.22)).

Anxiety:
Three studies considered this outcome with a total of 153 individuals. There was no significant statistical heterogeneity between these trials. The other therapies group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.48 (-0.82 to -0.14)).

Adverse effects:
No studies formally considered adverse effects.

Dropouts:
Three studies with a total of 166 individuals recorded whether individuals left the study early for any reason by group. There was no significant statistical heterogeneity between these trials. The other therapies group did significantly worse than the waitlist/usual care group (RR (95% CI) = 3.82 (1.19, 12.29)).

PTSD diagnosis after treatment:
Three studies with a total of 166 individuals reported this outcome. There was significant statistical heterogeneity between these

trials (Chi square = 8.72; p = 0.01: I square = 77.1%) and a random effects model was used to pool the data. There was no difference between the other therapies and the waitlist/usual care group (RR (95% CI) = 0.79 (0.53, 1.18)).

Group TFCBT versus waitlist/usual care:

Clinician rated PTSD symptoms:
One study considered this outcome with a total of 45 individuals. The group TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.72 (-1.14 to -0.31)).

Self reported PTSD symptoms:
Two studies considered this outcome with a total of 71 individuals. There was no significant statistical heterogeneity between these trials. The group TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.71 (-1.20 to -0.22)).

Depression:
No studies considered this outcome.

Anxiety:
No studies considered this outcome.

Adverse effects:
No studies formally considered adverse effects.

Dropouts:
Three studies with a total of 271 individuals recorded whether individuals left the study early for any reason by group. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the group TFCBT group and the waitlist/usual care group (RR (95% CI) = 1.00 (0.64, 1.56)).

PTSD diagnosis after treatment:
One study with a total of 48 individuals reported this outcome. There was no significant difference between the group TFCBT group and the waitlist/usual care group (RR (95% CI) = 0.56 (0.31, 1.01)).

TFCBT/Exposure therapy versus stress management:

Clinician rated PTSD symptoms:
Six studies considered this outcome with a total of 239 individuals. There was significant statistical heterogeneity between these trials (Chi square = 11.25; p = 0.05: I square = 55.6%) and a random effects model was used to pool the data. There was no statistically significant difference between the TFCBT group and the stress management group immediately after treatment (SMD (95% CI) = -0.27 (-0.71 to 0.16)). At 2-5 month follow-up five studies considered this outcome with a total of 127 individuals. There was no significant statistical heterogeneity between these trials. The TFCBT group did significantly better than the stress management group at 2-5 month follow-up (SMD (95% CI) = -0.48 (-0.84 to -0.12)).

Self reported PTSD symptoms:
Three studies considered this outcome with a total of 127 individuals. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the TFCBT group and the stress management group immediately after treatment (SMD (95% CI) = -0.37 (-0.74 to 0.01)). At 2-5 month follow-up two studies considered this outcome with a total of 54 individuals. The TFCBT group did significantly better than the stress management group at 2-5 month follow-up (SMD (95% CI) = -0.44 (-0.99 to -0.10)).

Depression:
Five studies considered this outcome with a total of 161 individuals. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the TFCBT group and the stress management group immediately after treatment (SMD (95% CI) = -0.25 (-0.57 to 0.08)). At 2-5 month follow-up five studies considered this outcome with a total of 147 individuals. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the TFCBT group and the stress management group at 2-5 month follow-up (SMD (95% CI) = -0.28 (-0.62 to 0.06)).

Anxiety:
Four studies considered this outcome with a total of 127 individuals. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the TFCBT group and the stress management group immediately after treatment (SMD (95% CI) = -0.12 (-0.49 to 0.26)). At 2-5 month follow-up five studies considered this outcome with a total of 117 individuals. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the TFCBT group and the stress management group at 2-5 month follow-up (SMD (95% CI) = -0.19 (-0.58 to 0.20)).

Adverse effects:
No studies formally considered adverse effects.

Dropouts:
Six studies with a total of 284 individuals recorded whether individuals left the study early for any reason by group. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the TFCBT group and the stress management group (RR (95% CI) = 1.17 (0.69, 2.0)).

PTSD diagnosis after treatment:
Six studies with a total of 284 individuals reported this outcome. There was no significant statistical heterogeneity between these trials. There was a statistically significant difference between the TFCBT group and the stress management group (RR (95% CI) = 0.78 (0.61, 0.99)).

TFCBT/Exposure therapy versus other therapies

Clinician rated PTSD symptoms:
Three studies considered this outcome with a total of 120 individuals. There was no significant statistical heterogeneity between these trials. The TFCBT group did significantly better than the other therapies group immediately after treatment (SMD (95% CI) = -0.81 (-1.19 to -0.42)). At 3 month follow-up two studies considered this outcome with a total of 70 individuals. There was no significant statistical heterogeneity between these trials. The TFCBT group did significantly better than the other therapies group at 3 month follow-up (SMD (95% CI) = -0.65 (-1.13 to -0.16)). One trial reported this outcome at 6 to 9 month follow-up and again found that the TFCBT group did significantly better than the other therapies group (SMD (95% CI) = -1.85 (-2.59 to -1.11)).

Self reported PTSD symptoms:
Three studies considered this outcome with a total of 176 individuals. There was significant statistical heterogeneity between these trials (Chi square = 21.90; p<0.0001: I square = 90.9%) and a random effects model was used to pool the data. The TFCBT group did significantly better than the other therapies group immediately after treatment (SMD (95% CI) = -1.18 (-2.32 to -0.03)). At 2-5 month follow-up two studies considered this outcome with a total of 131 individuals. There was significant statistical heterogeneity between these trials (Chi square = 4.43; p = 0.04: I square = 77.4%) and a random effects model was used to pool the data. There was no significant difference between the TFCBT and the other therapies group at 2-5 month follow-up (SMD (95% CI) = -0.28 (-1.04 to 0.48)). One trial reported this outcome at 6 to 9 month follow-up and again found that the TFCBT group did significantly better than the other therapies group (SMD (95% CI) = -1.72 (-2.45 to -1.00)).

Depression:
Three studies considered this outcome with a total of 120 individuals. There was no significant statistical heterogeneity between these trials. The TFCBT group did significantly better than the other therapies group immediately after treatment (SMD (95% CI) = -0.65 (-1.03 to -0.28)). At 2-5 month follow-up two studies considered this outcome with a total of 72 individuals. There was no significant statistical heterogeneity between these trials. The TFCBT group did significantly better than the other therapies group at 2-5 month follow-up (SMD (95% CI) = -0.53 (-1.00 to -0.05)).One trial reported this outcome at 6 to 9 month follow-up and again found that the TFCBT group did significantly better than the other therapies group (SMD (95% CI) = -1.08 (-1.74 to -0.42)).

Anxiety:
Four studies considered this outcome with a total of 197 individuals. There was significant statistical heterogeneity between these trials (Chi square = 12.85; p = 0.005: I square = 76.7%) and a random effects model was used to pool the data. There was no significant difference between the TFCBT and the other therapies group immediately after treatment (SMD (95% CI) = -0.47 (-1.11 to 0.17)). At 2-5 month follow-up three studies considered this outcome with a total of 149 individuals. There was no significant statistical heterogeneity between these trials. There was no significant difference between the TFCBT and the other therapies group at 2-5 month follow-up (SMD (95% CI) = -0.27 (-0.60 to 0.07)). One trial reported this outcome at 6 to 9 month follow-up and again found that the TFCBT group did significantly better than the other therapies group (SMD (95% CI) = -1.18 (-1.85 to -0.51)).

Adverse effects:
No studies formally considered adverse effects.

Dropouts:
Five studies with a total of 290 individuals recorded whether individuals left the study early for any reason by group. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the TFCBT group and the other therapies group (RR (95% CI) = 1.14 (0.68, 1.9)).

PTSD diagnosis after treatment:
Five studies with a total of 286 individuals reported this outcome. There was no significant statistical heterogeneity between these trials. There was a statistically significant difference between the between the TFCBT and the other therapies group (RR (95% CI) = 0.71 (0.56, 0.89)).

Stress management versus other therapies

Clinician rated PTSD symptoms:
One study considered this outcome with a total of 25 individuals. The stress management group did significantly better than the other therapies group immediately after treatment (SMD (95% CI) = -1.22 (-2.09 to -0.35)). At 3 month follow-up one study considered this outcome with a total of 18 individuals. There was no significant difference between the stress management and the other therapies group at 3 month follow-up (SMD (95% CI) = -0.38 (-1.31 to 0.55)).

Self reported PTSD symptoms:
No studies considered this outcome.

Depression:
One study considered this outcome with a total of 25 individuals. There was no significant difference between the stress management and the other therapies group immediately after treatment (SMD (95% CI) = -0.51 (-1.31 to 0.30)). At 3 month follow-up one study considered this outcome with a total of 18 individuals. There was no significant difference between the stress management and the other therapies group at 3 month follow-up (SMD (95% CI) = -0.48 (-1.42 to 0.46)).

Anxiety:
One study considered this outcome with a total of 25 individuals. There was no significant difference between the stress management and the other therapies group immediately after treatment (SMD

(95% CI) = -0.51 (-1.32 to 0.29)). At 3 month follow-up one study considered this outcome with a total of 18 individuals. There was no significant difference between the stress management and the other therapies group at 3 month follow-up (SMD (95% CI) = -0.68 (-1.64 to 0.28)).

Adverse effects:
No studies formally considered adverse effects.

Dropouts:
One study with a total of 31 individuals recorded whether individuals left the study early for any reason by group. There was no statistically significant difference between the stress management group and the waitlist/usual care group (RR (95% CI) = 0.82 (0.20, 3.46)).

PTSD diagnosis after treatment:
One study with a total of 31 individuals reported this outcome. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the stress management group and the waitlist/usual care group (RR (95% CI) = 0.58 (0.30, 1.11)).

Group TFCBT versus group non-TF CBT

Clinician rated PTSD symptoms:
One study considered this outcome with a total of 325 individuals. There was no significant difference between the group TFCBT and non-trauma-focused CBT groups (SMD (95% CI) = -0.12 (-0.34 to 0.10)).

Self reported PTSD symptoms:
No studies considered this outcome.

Depression:
No studies considered this outcome.

Anxiety:
No studies considered this outcome.

Adverse effects:
No studies formally considered adverse effects.

Dropouts:
One study with a total of 360 individuals recorded whether individuals left the study early for any reason by group. There was no statistically significant difference between the group TFCBT and non-trauma-focused CBT groups (RR (95% CI) = 1.38 (1.0, 1.9)).

PTSD diagnosis after treatment:
One study with a total of 360 individuals reported this outcome. There was no significant statistical heterogeneity between these trials. There was no statistically significant difference between the group TFCBT and non-trauma-focused CBT groups (RR (95% CI) = 0.98 (0.83, 1.16)).

Clinical heterogeneity subgroup analyses

In order to explore clinical heterogeneity, two subgroup analyses were performed for the primary outcome measure, i.e. clinician rated PTSD symptoms, for the TFCBT versus waitlist/usual care comparison. Thirteen studies had considered this outcome with a total of 609 individuals and the initial SMD was -1.36 (95% CI = -1.88 to -0.84), suggesting that the TFCBT group did significantly better than the waitlist/usual care group immediately after treatment. There was significant statistical heterogeneity between these trials (Chi square = 86.62; p<0.00001: I square = 86.1%).

Female only studies
Six studies considered this outcome with a total of 364 females. The TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -1.93 (-2.62 to -1.24)), demonstrating a larger difference in favour of TFCBT than in the overall analyses. Seven studies with mixed gender populations and a total of 145 inidividuals reported this outcome. Although the TFCBT group still did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -0.83 (-0.61 to -0.41)), the observed difference between groups was much reduced. The observed statistically significant heterogeneity remained following these subgroup analyses, although was much reduced in the mixed gender subgroup (Chi square = 14.52; p = 0.02: I square = 58.7%).

Studies not considering Vietnam veterans
Twelve studies considered this outcome with a total of 585 individuals. The TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -1.45 (-1.98 to -0.92)), demonstrating little difference from the overall analyses. Excluding this one trial made no difference to the observed statistically significant heterogeneity.

Sensitivity analyses

In order to explore the impact of methodological quality, a sensitivity analysis was performed for the primary outcome measure, i.e. clinician rated PTSD symptoms, for the TFCBT versus waitlist/usual care comparison.

Thirteen studies had considered this outcome with a total of 609 individuals and the initial SMD was -1.36 (95% CI = -1.88 to -0.84), suggesting that the TFCBT group did significantly better than the waitlist/usual care group immediately after treatment. The studies were divided into higher and lower quality studies. Eight higher quality studies considered this outcome with a total of 453 individuals. The TFCBT group again did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -1.56 (-2.17 to -0.93)). Five lower quality studies considered this outcome with a total of 156 individuals. Once more, the TFCBT group did significantly better than the waitlist/usual care group immediately after treatment (SMD (95% CI) = -1.02 (-1.84 to -0.20)), although in the lower quality studies the observed difference between groups was reduced. The

observed statistically significant heterogeneity remained in each of these subgroup analyses.

Publication bias

All the studies identified for this review were published or were accepted for publication, and many of the trials were undertaken relatively recently. The potential effects of publication bias were explored using funnel plots. Two funnel plots were constructed using data from the TFCBT versus waitlist/usual care comparison, one involving continuous data on the primary outcome (clinician-rated PTSD symptoms - see Figure 01), and the second involving dichotomous data on a secondary outcome (PTSD diagnosis after treatment - see Figure 02). These funnel plots both show that the smaller studies may tend to report larger differences between TFCBT and Waitlist/Usual Care, and both suggest an absence of studies demonstrating no difference or a difference in favour of Waitlist/Usual care. It is therefore possible that, due to the greater likelihood of publication of positive studies, the true difference between groups is smaller than is suggested by this review.

DISCUSSION

Trauma focused cognitive behavioural therapy

There was good evidence that TFCBT was better than wait list/usual care in reducing traumatic stress symptoms and additionally associated symptoms of depression and anxiety. It is possible that this may be stronger than suggested by the data, as in several studies the wait list/usual care group received some contact and the expectation that they would be treated which may have been therapeutic. However, there it is also possible that wait list groups do worse than usual care groups because they do not expect to improve until they receive the active intervention. The overall standardised mean difference for traumatic stress symptoms post treatment represents an effect size generally accepted as indicating a strong positive effect. After exploration of heterogeneity this finding remains robust although there is significant heterogeneity present on all analyses. There is not enough evidence to determine if this advantage is maintained over time, but the continuation of improvement of the active treatment groups in the trials with longer follow-ups suggest that this was the case.

There was some evidence that TFCBT was a more effective treatment than non-trauma focused therapies, although the difference was not significant immediately following treatment. TFCBT was significantly better than other therapies immediately and than stress management at follow-up.

Stress management

There was evidence that stress management was better than wait list/usual care in reducing traumatic stress symptoms and additionally associated symptoms of depression and anxiety although this was based on only 2 studies with a small sample size. There was some evidence that stress management is a more effective treatment than other non-trauma focused therapies, but this was from the results of one study only.

Other therapies

There was no difference between other therapies and waitlist/usual care on the main outcome measure but it did fare better on the self-report traumatic stress measure. As stated above other therapies were significantly worse in terms of the primary outcome measure when directly compared with TFCBT and stress management.

Group TFCBT

There was evidence that group TFCBT was better than waitlist/usual care in reducing traumatic stress symptoms although this was based on only one study with a small sample size. There was no difference between group TFCBT and non-trauma focused group CBT.

Anxiety and Depression

Symptoms of anxiety and depression generally improved in line with improvements in traumatic stress symptoms. This is no surprise for treatments such as cognitive restructuring where many of the approaches used for PTSD would also be used for anxiety and depression. However other treatments such as exposure therapy do not address depressive symptoms per se yet still appeared to reduce anxiety and depressive and anxiety symptoms. This suggests that the anxiety and depressive symptoms found in many PTSD sufferers in these studies were secondary to the PTSD rather than being discrete conditions requiring specific treatment.

Adverse effects

Unfortunately no studies reported adverse effects. It is well recognised that adverse effects may occur such as increased reexperiencing following exposure treatment (e.g. Pitman 1991) and the absence of any reporting of them is of major concern.

Dropouts

Most studies reported on dropouts by group which is likely to be contributed to by adverse effects along with other factors. TFCBT and other therapies both did worse than wait list/usual care on this outcome measure but there were no significant differences in drop-out rates in direct comparisons between active treatments. Our results suggest that the active treatments were not always acceptable to those receiving them. This is an important finding and one that should stimulate the development of interventions that are more acceptable to those who receive them.

Heterogeneity

The Forest plots of the pooled results demonstrated significant heterogeneity between the studies. For example, heterogeneity levels of $p < 0.00001$ were observed in several analyses of the primary outcome measure. There are likely to be several factors that contribute to the heterogeneity.

There is clearly considerable clinical diversity within the studies considered. An attempt was made to explore this by performing subgroup analyses on the primary outcome measure of TFCBT versus waitlist/usual care. Those studies including only females, all of whom had been sexually or non-sexually assaulted, produced more positive results than the overall results. Possible explanations include the treatments having been superior, females being more responsive to TFCBT than males, traumatisation by assault being more responsive to TFCBT, a combination of these and/or other factors. Those studies that did not include only Vietnam veterans produced a slightly more positive result than all studies. However there was only one study excluded in this subgroup analysis. Therefore the analysis may lack power to show a real difference and great caution must be exercised in interpreting this.

The separation of different active interventions into groups partially addresses the clinical diversity, although not all trials within the same group used identical interventions. The differences were most marked in the "other treatments" group which had in common the absence of cognitive-behavioural techniques and trauma-focused work. There was also diversity in the TFCBT group which included both exposure only and trauma-focused cognitive therapy interventions.

Another source of heterogeneity was the quality of the studies. Sensitivity analyses of higher quality and lower quality studies were performed for the primary outcome measure comparison of TFCBT versus waitlist/usual care to explore this further. The higher quality studies showed better outcomes than the lower quality studies. This finding contradicts previous research (e.g. Moher 1998) that has found an association between poorer methodology and more favourable results for the intervention. Our finding may reflect the fact that the better studies tended to be more recent and associated with refinement of TFCBT techniques. They also included most of the female only studies.

As with all psychological treatment trials there are issues with the control groups. The development of a "psychological treatment placebo" is very difficult, if not impossible, as is blinding of participants and therapists.

Summary

Twenty-nine studies were included in the review. TFCBT did significantly better than waitlist/usual care in reducing clinician assessed PTSD symptoms. There was no significant difference between TFCBT and SM, although TFCBT did significantly better than other therapies. Stress management did significantly better than waitlist/usual care and than other therapies. There was no significant difference between other therapies and waitlist/usual care control. Group TFCBT was significantly better than waitlist/usual care. The considerable unexplained heterogeneity observed in these comparisons, and the potential impact of publication bias on these data, suggest the need for caution in interpreting the results of this review.

AUTHORS' CONCLUSIONS

Implications for practice

1. Psychological treatment can reduce traumatic stress symptoms in individuals with PTSD.
2. Trauma focused cognitive behavioural therapy has the best evidence for efficacy at present and should be made available to PTSD sufferers.
3. There is some limited evidence that stress management is effective.
4. There is more limited evidence that other non trauma focused psychological treatments are effective.
5. Drop-out from treatment is an issue with currently available psychological treatments.

Implications for research

1. Further well-designed trials of psychological treatments are required.
2. There is a requirement for further comparison studies of one type of psychological treatment against another.
3. Future trials should consider adverse events and tolerability of treatment in more detail.
4. The role of psychological treatment in combination and as an alternative to medication is unclear. Further research in this area would be useful.

NOTES

Eye movement desensitisation and reprocessing (EMDR) was previously removed from the protocol for this review as it was the focus of a separate Cochrane review, EMDR for PTSD. However, the protocol for EMDR for PTSD has now been withdrawn. Trials of EMDR will now be included in this review. We expect to be able to publish the extended version of this review in Issue 1 2006.

POTENTIAL CONFLICT OF INTEREST

Nil.

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** Indicates the major publication for the study*

TABLES

Characteristics of included studies

Study	Blanchard 2003
Methods	Randomised controlled trial - bias possible
Participants	98 road traffic accident survivors
Interventions	8-12 sessions TFCBT vs 8-12 sessions supportive psychotherapy vs waiting list
Outcomes	APS, IES,STAI

Characteristics of included studies (*Continued*)

Notes	
Allocation concealment	B

Study	**Blanchard 2003b**
Methods	Randomised controlled trial -bias possible
Participants	98 road traffic accident survivors
Interventions	8-12 sessions TFCBT vs 8-12 sessions supportive psychotherapy vs waiting list
Outcomes	APS, IES,STAI
Notes	
Allocation concealment	B

Study	**Brom 1989**
Methods	Randomised controlled trial -bias possible
Participants	112 outpatients. Various traumas, 89 bereaved.
Interventions	14-18 sessions of trauma desensitisatrion, hypnotherapy, psychodynamic therapy or waiting list
Outcomes	"trauma symptoms" on SCL-90, STAI
Notes	
Allocation concealment	B

Study	**Bryant 2003**
Methods	Randomised controlled trial - no bias likely
Participants	58 outpatient survivors of non-sexual assaults or road traffic accidents.
Interventions	8 weekly 90 minute sessions of imaginal exposure, imaginal exposure/cognitive restructuring or supportive counselling.
Outcomes	CAPS, IES, STAI, BDI
Notes	
Allocation concealment	B

Study	**Carlson 1998**
Methods	Randomised controlled trial - bias possible
Participants	35 males with combat-related PTSD
Interventions	12 bi-weekly sessions of 60-75 minutes EMDR versus 40 minutes biofeedback assisted relaxation versus routine care
Outcomes	Mississippi PTSD scale, IES, STAI, BDI
Notes	
Allocation concealment	B

Study	**Classen 2001**
Methods	Randomised controlled trial -bias possible
Participants	52 female child sexual abuse survivors
Interventions	24 ninety minute sessions of trauma-focused or present-focused group therapy vs wait list
Outcomes	TSC-40
Notes	

Characteristics of included studies (*Continued*)

Allocation concealment	B

Study	**Cloitre 2002**
Methods	Randomised controlled trial -bias possible
Participants	58 female child sexual abuse survivors
Interventions	16 biweekly sessions of 1.5 hours of prolonged exposure and affect regulation versus waiting list
Outcomes	CAPS, BDI, STAI
Notes	
Allocation concealment	B

Study	**Cooper 1989**
Methods	Randomised controlled trial
Participants	16 Vietnam veterans. All DSMIIIPTSD
Interventions	6-14 90 minute flooding sessions plus standard treatment versus standard treatment
Outcomes	STAI, BDI
Notes	
Allocation concealment	C

Study	**Echeburua 1997**
Methods	Randomised controlled trial
Participants	20 female sexual aggression survivors
Interventions	6 weekly sessions of graded self-exposure versus relaxation therapy
Outcomes	Global PTSD scale, STAI, BDI
Notes	
Allocation concealment	B

Study	**Ehlers 2003**
Methods	Randomised controlled trial - bias possible
Participants	28 survivors of various adulthood discrete traumas. All DSMIV PTSD.
Interventions	Up to 12 weekly trauma focused cognitive therapy sessions versus wait list control.
Outcomes	CAPS, BDI, BAI
Notes	
Allocation concealment	B

Study	**Fecteau 1999**
Methods	Randomised controlled trial - bias possible
Participants	Road traffic accidents
Interventions	8-10 hours CBT versus wait list
Outcomes	CAPS, IES, BDI, BAI
Notes	
Allocation concealment	C

Study	**Foa 1991**
Methods	Randomised controlled trial - bias possible

Characteristics of included studies (*Continued*)

Participants	45 female rape victims. All DSMIIIR PTSD
Interventions	9 1.5 hour sessions of prolonged exposure versus stress innoculation training versus supportive counselling versus waiting list control
Outcomes	PTSD severity, BDI, STAI
Notes	
Allocation concealment	C

Study	**Foa 1991b**
Methods	Randomised controlled trial - bias possible
Participants	45 female rape victims. All DSMIIIR PTSD
Interventions	9 1.5 hour sessions of prolonged exposure versus stress innoculation training versus supportive counselling versus waiting list control
Outcomes	PTSD severity, BDI, STAI
Notes	
Allocation concealment	C

Study	**Foa 1991c**
Methods	Randomised controlled trial -bias possible
Participants	45 female rape victims. All DSMIIIR PTSD
Interventions	9 1.5 hour sessions of prolonged exposure versus stress innoculation training versus supportive counselling versus waiting list control
Outcomes	PTSD severity, BDI, STAI
Notes	
Allocation concealment	C

Study	**Foa 1999**
Methods	Randomised controlled trial - bias possible
Participants	96 female sexual assault victims (69 sexual assault)
Interventions	9 sessions (2 x 2 hours, 7 x 1.5 hours) prolonged exposure versus stress innoculation training versus combination PIE-SIT versus waiting list
Outcomes	PSS-I, BDI, STAI
Notes	
Allocation concealment	C

Study	**Foa 1999b**
Methods	Randomised controlled trial - bias possible
Participants	96 female sexual assault victims (69 sexual assault)
Interventions	9 sessions (2 x 2 hours, 7 x 1.5 hours) prolonged exposure versus stress innoculation training versus combination PIE-SIT versus waiting list
Outcomes	PSS-I, BDI, STAI
Notes	
Allocation concealment	C

Characteristics of included studies (*Continued*)

Study	**Gersons 2000**
Methods	Randomised controlled trial -bias possible
Participants	42 police officers. DSMIIIR PTSD. Various workplace traumas.
Interventions	16x60 minute sessions of brief eclectic therapy
Outcomes	SI-PTSD, SCL-90
Notes	
Allocation concealment	B

Study	**Keane 1989**
Methods	Randomised controlled trial -bias possible
Participants	24 Vietnam veterans. DSMIIIR PTSD
Interventions	14-16 sessions implosive (flooding) versus waiting list control
Outcomes	MMPI - PTSD subscale, BDI, STAI
Notes	
Allocation concealment	B

Study	**Krakow 2001**
Methods	Randomised controlled trial - no bias likely
Participants	169 female sexual assault survivors. 95% DSMIIIR PTSD
Interventions	2x3 hours and 1x1 hour sessions of group imagery rehearsal versus waiting list.
Outcomes	PSS
Notes	
Allocation concealment	C

Study	**Kubany 2003**
Methods	Randomised controlled trial - bias possible
Participants	42 female survivors of assault.
Interventions	8-11 biweekly 90 minute sessions of cognitive trauma therapy vs wait list
Outcomes	CAPS, BDI
Notes	
Allocation concealment	C

Study	**Kubany 2004**
Methods	Randomised controlled trial -bias possible
Participants	85 female survivors of assault
Interventions	8-11 biweekly 90 minute sessions of cognitive trauma therapy vs wait list
Outcomes	CAPS, BDI
Notes	
Allocation concealment	B

Study	**Marks 1998**
Methods	Randomised controlled trial - no bias likely
Participants	87 DSMIIIR PTSD. Various traumas

Characteristics of included studies (*Continued*)

Interventions	10 x 90 minute sessions of exposure vs cognitive restructuring vs exposure and cognitive restructuring vs relaxation therapy
Outcomes	CAPS, IES, BDI, STAI
Notes	
Allocation concealment	B

Study	**Neuner 2004**
Methods	Randomised controlled trial - bias possible
Participants	43 Sudanese refugees. All diagnosed with PTSD.
Interventions	4 sessions of narrative exposure therapy versus 4 sessions of supportive counselling versus one session of psychoeducation
Outcomes	PDS
Notes	
Allocation concealment	C

Study	**Peniston 1991**
Methods	Randomised controlled trial - bias possible
Participants	16 Vietnam combat veterans with DSMIII PTSD.
Interventions	48 x 30 minute sessions of EMG assisted desensitisation vs no treatment
Outcomes	nightmare and flashback frequency
Notes	
Allocation concealment	B

Study	**Power 2002**
Methods	Randomised controlled trial - bias possible
Participants	105 outpatients with DSMIV PTSD. Various traumas.
Interventions	10 x 90 minute weekly sessions of EMDR versus exposure plus cognitive restructuring versus wait list.
Outcomes	CAPS, HAM-A, MADRS
Notes	
Allocation concealment	A

Study	**Resick 2002**
Methods	Randomised controlled trial - no bias possible
Participants	121 female rape victims with DSMIV PTSD
Interventions	13 hours of cognitive processing therapy or exposure biweekly over six weeks versus minimal attention.
Outcomes	CAPS, PSS, BDI
Notes	
Allocation concealment	B

Study	**Resick 2002b**
Methods	Randomised controlled trial - no bias likely
Participants	121 female rape victims with DSMIV PTSD
Interventions	13 hours of cognitive processing therapy or exposure biweekly over six weeks versus minimal attention.

Characteristics of included studies (*Continued*)

Outcomes	CAPS, PSS, BDI
Notes	
Allocation concealment	B

Study	**Schnurr 2003**
Methods	Randomised controlled trial - no bias likely
Participants	360 male Vietnam veterans with DSMIV PTSD
Interventions	Weekly present-focused group CBT for 30 weeks versus weekly trauma-ficused CBT group therapy for 30 weeks.
Outcomes	CAPS, GHQ, SF36
Notes	
Allocation concealment	B

Study	**Taylor 2003**
Methods	Randomised controlled trial - bias possible
Participants	60 outpatients. Various traumas. DSMIV PTSD.
Interventions	8 ninety minute sessions of exposure therapy, EMDR or relaxation training.
Outcomes	CAPS, PDS, BDI
Notes	
Allocation concealment	B

Study	**Vaughan 1994**
Methods	Randomised controlled trial - no bias likely
Participants	36 various traumas. 78% DSMIIIR PTSD.
Interventions	3-5 50 minute sessions of image habituation training, EMDR or applied muscular relaxation versus waiting list
Outcomes	PTSD structured interview, IES, STAI, BDI
Notes	
Allocation concealment	B

Study	**Vaughan 1994b**
Methods	Randomised controlled trial - no bias likely
Participants	36 various traumas. 78% DSMIIIR PTSD.
Interventions	3-5 50 minute sessions of image habituation training, EMDR or applied muscular relaxation versus waiting list
Outcomes	PTSD structured interview, IES, STAI, BDI
Notes	
Allocation concealment	B

Study	**Zlotnick 1997**
Methods	Randomised controlled trial - bias possible
Participants	48 female sexual abuse survivors. All DSMIIIR PTSD.
Interventions	15 2-hour sessions of group affective management versus waiting list control
Outcomes	DTS

Characteristics of included studies (*Continued*)

Notes	medication and individual psychological treatment continued during study
Allocation concealment	B

Characteristics of excluded studies

Chemtob 1997	Treatment designed for anger versus PTSD with anger measures used as primary outcomes
Echeburua 1996	Trauma < 3 months before entry into study
Frank 1988	Not a true RCT
Gidron 1996	Not psychological treatment
Lange 2003	No formal diagnosis of PTSD made
Paunovic 2001	TFCBT vs TFCBT
Tarrier 1999	Compared trauma focused cognitve therpay with exposure therapy therefore both treatments = TFCBT.
Watson 1997	Considered three different types of relaxation training with no other comparison group

G R A P H S

Comparison 01. Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Severity of PTSD symptoms			Standardised Mean Difference (Random) 95% CI	Subtotals only
02 Depression	13	585	Standardised Mean Difference (Random) 95% CI	-1.20 [-1.65, -0.75]
03 Anxiety			Standardised Mean Difference (Fixed) 95% CI	Subtotals only
04 Leaving the study early due to any reason	14	814	Relative Risk (Fixed) 95% CI	1.47 [1.07, 2.02]
05 PTSD diagnosis after treatment	14	716	Relative Risk (Random) 95% CI	0.47 [0.37, 0.59]

Comparison 02. Stress Management Therapy vs Waitlist/Usual Care

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Severity of PTSD symptoms - Clinician			Standardised Mean Difference (Fixed) 95% CI	Subtotals only
02 Severity of PTSD symptoms - Self-report			Standardised Mean Difference (Random) 95% CI	Subtotals only
03 Depression	4	109	Standardised Mean Difference (Fixed) 95% CI	-0.73 [-1.12, -0.33]
04 Anxiety	3	82	Standardised Mean Difference (Fixed) 95% CI	-0.77 [-1.23, -0.31]
05 Leaving the study early due to any reason	4	121	Relative Risk (Fixed) 95% CI	2.19 [0.71, 6.73]
06 PTSD diagnosis after treatment	4	121	Relative Risk (Random) 95% CI	0.64 [0.47, 0.87]

Comparison 03. Other Therapies vs Waitlist/Usual Care

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Severity of PTSD symptoms - self report	2	132	Standardised Mean Difference (Fixed) 95% CI	-0.61 [-0.98, -0.24]
02 Severity of PTSD symptoms - clinician	2	72	Standardised Mean Difference (Fixed) 95% CI	-0.43 [-0.90, 0.04]
04 Depression			Standardised Mean Difference (Fixed) 95% CI	Subtotals only
05 Anxiety - Self report	3	153	Standardised Mean Difference (Fixed) 95% CI	-0.48 [-0.82, -0.14]
06 Leaving the study early due to any reason	3	166	Relative Risk (Fixed) 95% CI	3.82 [1.19, 12.29]
07 PTSD diagnosis after treatment	3	166	Relative Risk (Random) 95% CI	0.79 [0.53, 1.18]

Comparison 04. Group CBT vs Waitlist/Usual Care

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Severity of PTSD symptoms - self-report	2	71	Standardised Mean Difference (Fixed) 95% CI	-0.71 [-1.20, -0.22]
02 Severity of PTSD symptoms - clinician			Standardised Mean Difference (Fixed) 95% CI	Subtotals only
03 Leaving the study early due to any reason	3	271	Relative Risk (Fixed) 95% CI	1.00 [0.64, 1.56]
04 PTSD diagnosis after treatment	1	48	Relative Risk (Fixed) 95% CI	0.56 [0.31, 1.01]

Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Severity of PTSD Symptoms - clinician	6	239	Standardised Mean Difference (Random) 95% CI	-0.27 [-0.71, 0.16]
02 Severity of PTSD symptoms - self report	3	127	Standardised Mean Difference (Fixed) 95% CI	-0.37 [-0.74, 0.01]
03 Severity of PTSD symptoms - clinician - follow-up (2-5 months)	5	127	Standardised Mean Difference (Fixed) 95% CI	-0.48 [-0.84, -0.12]
04 Severity of PTSD symptoms - self report - follow-up (2-5 months)	2	54	Standardised Mean Difference (Fixed) 95% CI	-0.44 [-0.99, 0.10]
05 Depression	5	161	Standardised Mean Difference (Fixed) 95% CI	-0.25 [-0.57, 0.08]
06 Depression - follow-up (2-5 months)	5	147	Standardised Mean Difference (Fixed) 95% CI	-0.28 [-0.62, 0.06]
07 Anxiety	4	127	Standardised Mean Difference (Fixed) 95% CI	-0.12 [-0.49, 0.26]
08 Anxiety - Follow-up (2-5 months)	4	117	Standardised Mean Difference (Fixed) 95% CI	-0.19 [-0.58, 0.20]
09 Leaving the study early due to any reason	6	284	Relative Risk (Fixed) 95% CI	1.17 [0.69, 2.00]
10 PTSD diagnosis after treatment	6	284	Relative Risk (Fixed) 95% CI	0.78 [0.61, 0.99]

Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Severity of PTSD symptoms - clinician	3	120	Standardised Mean Difference (Fixed) 95% CI	-0.81 [-1.19, -0.42]
02 Severity of PTSD symptoms - clinician - follow-up (3 months)	2	70	Standardised Mean Difference (Fixed) 95% CI	-0.65 [-1.13, -0.16]
03 Severity of PTSD symptoms - self report	3	176	Standardised Mean Difference (Random) 95% CI	-1.18 [-2.32, -0.03]
04 Severity of PTSD symptoms - self report - follow-up (2-5 months)	2	131	Standardised Mean Difference (Random) 95% CI	-0.28 [-1.04, 0.48]
05 Depression - self report	3	120	Standardised Mean Difference (Fixed) 95% CI	-0.65 [-1.03, -0.28]
06 Anxiety - self report	4	197	Standardised Mean Difference (Random) 95% CI	-0.47 [-1.11, 0.17]
07 Depression - self-report - follow-up (2-5 months)	2	72	Standardised Mean Difference (Fixed) 95% CI	-0.53 [-1.00, -0.05]
08 Anxiety - self-report - follow-up (2-5 months)	3	149	Standardised Mean Difference (Fixed) 95% CI	-0.27 [-0.60, 0.07]
09 PTSD diagnosis after treatment	5	286	Relative Risk (Fixed) 95% CI	0.71 [0.56, 0.89]
10 Leaving the study early due to any reason	5	290	Relative Risk (Fixed) 95% CI	1.14 [0.68, 1.90]
11 Severity of PTSD symptoms - clinician - follow-up (6-9 months)	1	45	Standardised Mean Difference (Fixed) 95% CI	-1.85 [-2.59, -1.11]
12 Severity of PTSD symptoms - self-report - follow-up (6-9 months)	1	45	Standardised Mean Difference (Fixed) 95% CI	-1.72 [-2.45, -1.00]
13 Depression - follow-up (6-9 months)	1	45	Standardised Mean Difference (Fixed) 95% CI	-1.08 [-1.74, -0.42]
14 Anxiety - follow-up (6-9 months)	1	45	Standardised Mean Difference (Fixed) 95% CI	-1.18 [-1.85, -0.51]

Comparison 07. Stress Management Therapy vs Other Therapies

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Severity of PTSD symptoms - Clincian	1	25	Standardised Mean Difference (Fixed) 95% CI	-1.22 [-2.09, -0.35]
02 Anxiety - Self-report	1	25	Standardised Mean Difference (Fixed) 95% CI	-0.51 [-1.32, 0.29]
03 Depression - Self-report	1	25	Standardised Mean Difference (Fixed) 95% CI	-0.51 [-1.31, 0.30]
04 Severity of PTSD symptoms - clinician - follow-up (3 months)	1	18	Standardised Mean Difference (Fixed) 95% CI	-0.38 [-1.31, 0.55]
05 Anxiety - self-report - follow-up (3 months)	1	18	Standardised Mean Difference (Fixed) 95% CI	-0.68 [-1.64, 0.28]
06 Depression - self-report - follow-up (3 months)	1	18	Standardised Mean Difference (Fixed) 95% CI	-0.48 [-1.42, 0.46]
07 PTSD diagnosis after treatment	1	31	Relative Risk (Fixed) 95% CI	0.58 [0.30, 1.11]

08 Leaving the study early due to any reason	1	31	Relative Risk (Fixed) 95% CI	0.82 [0.20, 3.46]

Comparison 08. Group CBT (trauma focused) vs Group CBT (non-trauma focused)

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Severity of PTSD symptoms	1	325	Standardised Mean Difference (Fixed) 95% CI	-0.12 [-0.34, 0.10]
02 Leaving the study early due to any reason	1	360	Relative Risk (Fixed) 95% CI	1.38 [1.00, 1.90]
03 PTSD diagnosis after treatment	1	360	Relative Risk (Fixed) 95% CI	0.98 [0.83, 1.16]

INDEX TERMS

Medical Subject Headings (MeSH)

Adult; Behavior Therapy [methods]; Cognitive Therapy [methods]; Psychotherapy [methods]; Psychotherapy, Group; Randomized Controlled Trials; Stress [therapy]; Stress Disorders, Post-Traumatic [psychology]

Medical MeSH check words

Humans

COVER SHEET

Title	Psychological treatment of post-traumatic stress disorder (PTSD)
Authors	Bisson J, Andrew M
Contribution of author(s)	JIB has been involved in the identification, quality appraisal, data entry, analysis and writing of the review. MA has been involved in the identification, quality appraisal and and writing of the review. JIB has been involved in two randomised trials of early psychological interventions designed to prevent PTSD following traumatic events.
Issue protocol first published	2001/4
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What's New	Information not supplied by author
Date new studies sought but none found	Information not supplied by author
Date new studies found but not yet included/excluded	Information not supplied by author
Date new studies found and included/excluded	Information not supplied by author
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GRAPHS AND OTHER TABLES

Fig. 1. Funnel plot shows that the smaller studies may tend to report larger differences between TFCBT and Waitlist/Usual Care and suggests an absence of studies demonstrating no difference or a difference in favour of Waitlist/Usual care.

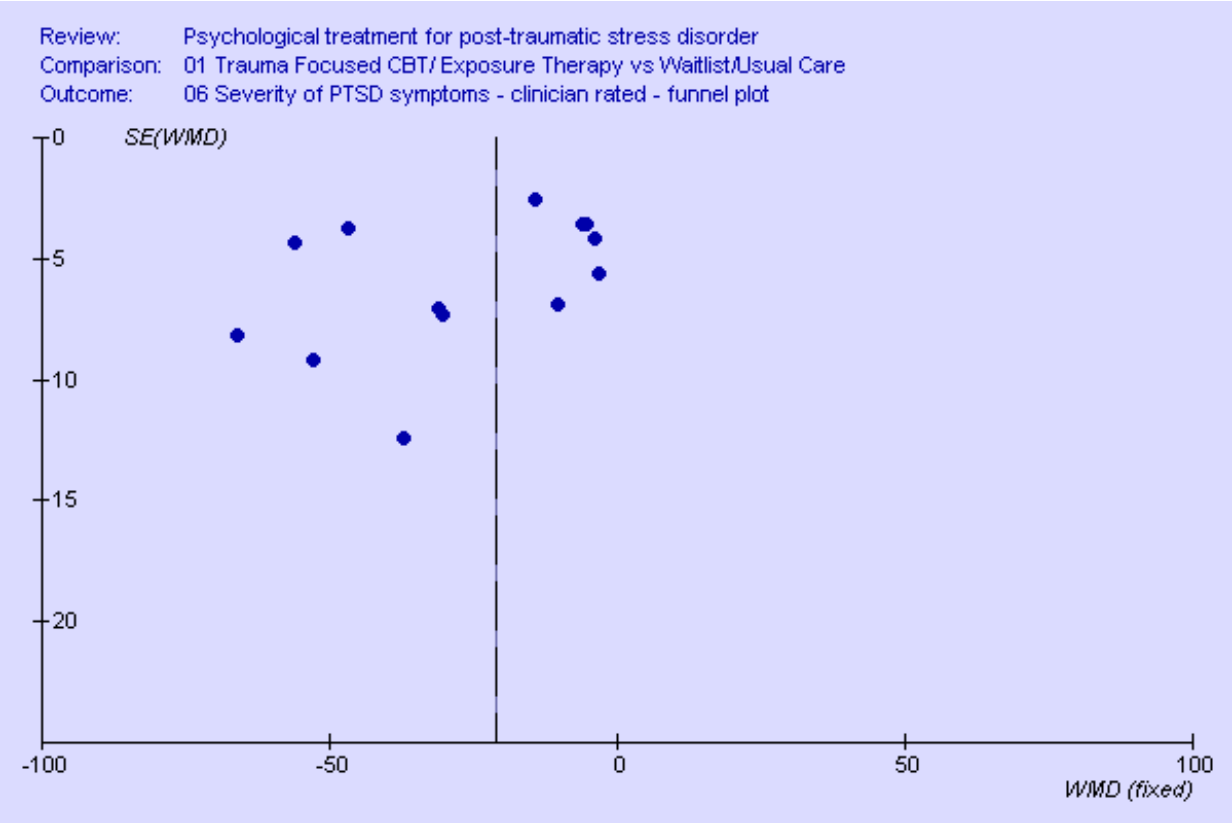


Fig. 2. Funnel plot shows that the larger studies demonstrate smaller differences between TFCBT and Waitlist./Usual Care and suggests an absence of smaller studies demonstrating no difference or a difference in favour of Waitlist/Usual care.

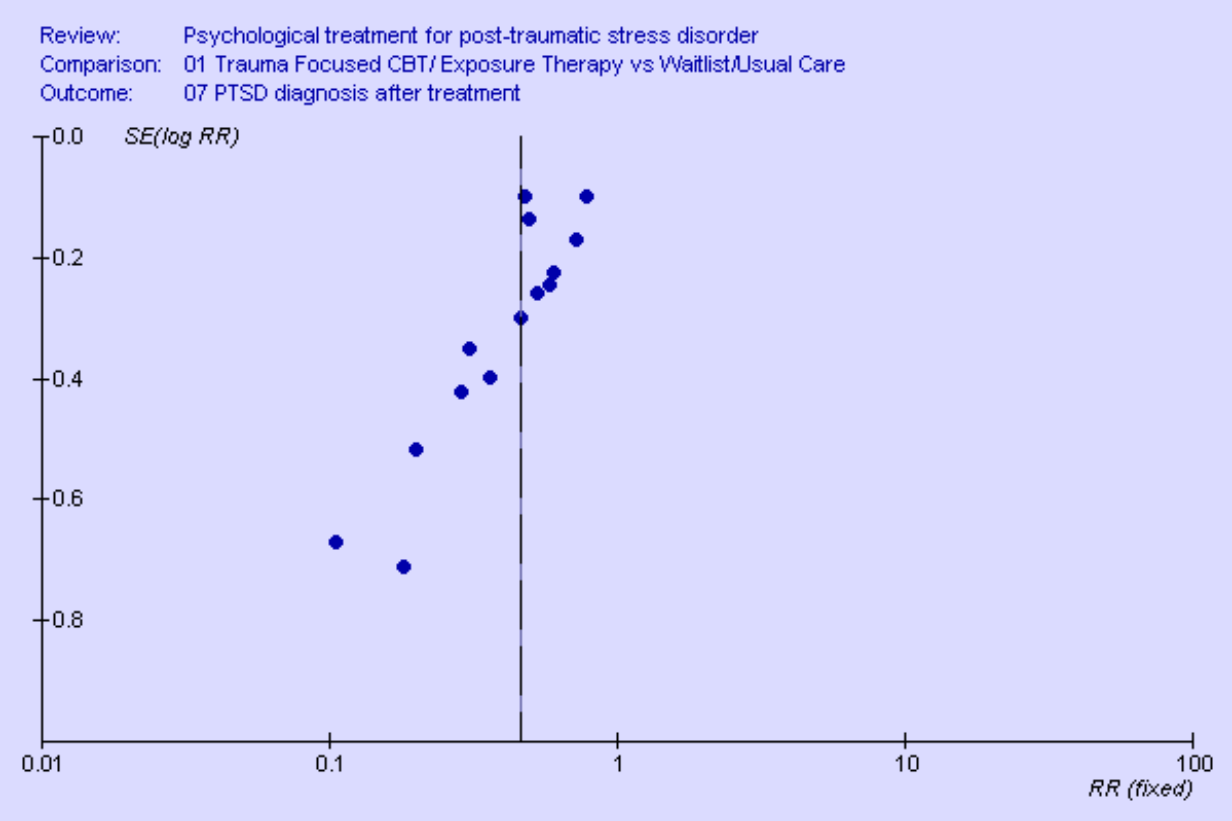


Fig. 3. Comparison 01. Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

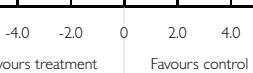
01.01 Severity of PTSD symptoms

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 01 Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

Outcome: 01 Severity of PTSD symptoms

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Waitlist/Usual Care N	Waitlist/Usual Care Mean(SD)	Standardised Mean Difference (Random) 95% CI	Weight (%)	Standardised Mean Difference (Random) 95% CI
01 Clinician							
Blanchard 2003	27	23.70 (26.20)	24	54.00 (25.90)		8.2	-1.14 [-1.74, -0.55]
Brom 1989	27	56.20 (24.10)	23	66.40 (24.30)		8.3	-0.42 [-0.98, 0.15]
Cloitre 2002	22	31.00 (25.20)	24	62.00 (22.70)		8.0	-1.27 [-1.91, -0.63]
Ehlers 2003	14	21.58 (28.56)	14	74.55 (19.12)		7.0	-2.12 [-3.07, -1.16]
Fecteau 1999	10	37.50 (30.40)	10	74.60 (24.70)		6.9	-1.28 [-2.27, -0.30]
Foa 1991	10	15.40 (11.09)	10	19.50 (7.18)		7.2	-0.42 [-1.31, 0.47]
Foa 1999	45	12.60 (8.37)	15	26.93 (8.47)		8.0	-1.68 [-2.35, -1.02]
Gersons 2000	22	3.00 (10.00)	20	9.00 (13.00)		8.1	-0.51 [-1.13, 0.11]
Keane 1989	11	28.80 (15.00)	13	31.90 (12.00)		7.5	-0.22 [-1.03, 0.58]
Kubany 2003	18	10.10 (19.30)	14	76.10 (25.20)		6.7	-2.92 [-3.95, -1.88]
Kubany 2004	45	15.80 (14.40)	40	71.90 (23.80)		8.1	-2.87 [-3.48, -2.25]
Resick 2002	81	23.00 (19.92)	40	69.73 (19.19)		8.5	-2.36 [-2.84, -1.87]
Vaughan 1994	13	23.00 (10.20)	17	28.50 (8.90)		7.7	-0.56 [-1.30, 0.17]
Subtotal (95% CI)	345		264			100.0	-1.36 [-1.88, -0.84]
Test for heterogeneity chi-square=86.62 df=12 p=<0.0001 I² =86.1%							
Test for overall effect z=5.14 p<0.00001							
02 Self-report							
Blanchard 2003	27	12.10 (14.90)	24	36.60 (17.20)		13.8	-1.51 [-2.13, -0.88]
Brom 1989	27	28.00 (19.50)	23	46.50 (15.20)		14.1	-1.03 [-1.63, -0.44]
Cloitre 2002	22	29.00 (27.60)	24	58.00 (28.60)		13.9	-1.01 [-1.63, -0.40]
Ehlers 2003	14	10.30 (8.90)	14	29.80 (8.40)		10.8	-2.19 [-3.15, -1.22]
Fecteau 1999	10	15.50 (20.30)	10	48.80 (14.70)		9.9	-1.80 [-2.87, -0.72]
Peniston 1991	15	11.00 (6.00)	14	35.00 (6.00)		8.3	-3.89 [-5.19, -2.59]
Power 2002	21	19.20 (12.30)	24	29.60 (8.60)		13.9	-0.97 [-1.60, -0.35]
Resick 2002	80	10.05 (8.17)	39	27.95 (8.41)		15.2	-2.16 [-2.63, -1.68]
Subtotal (95% CI)	216		172			100.0	-1.70 [-2.21, -1.18]



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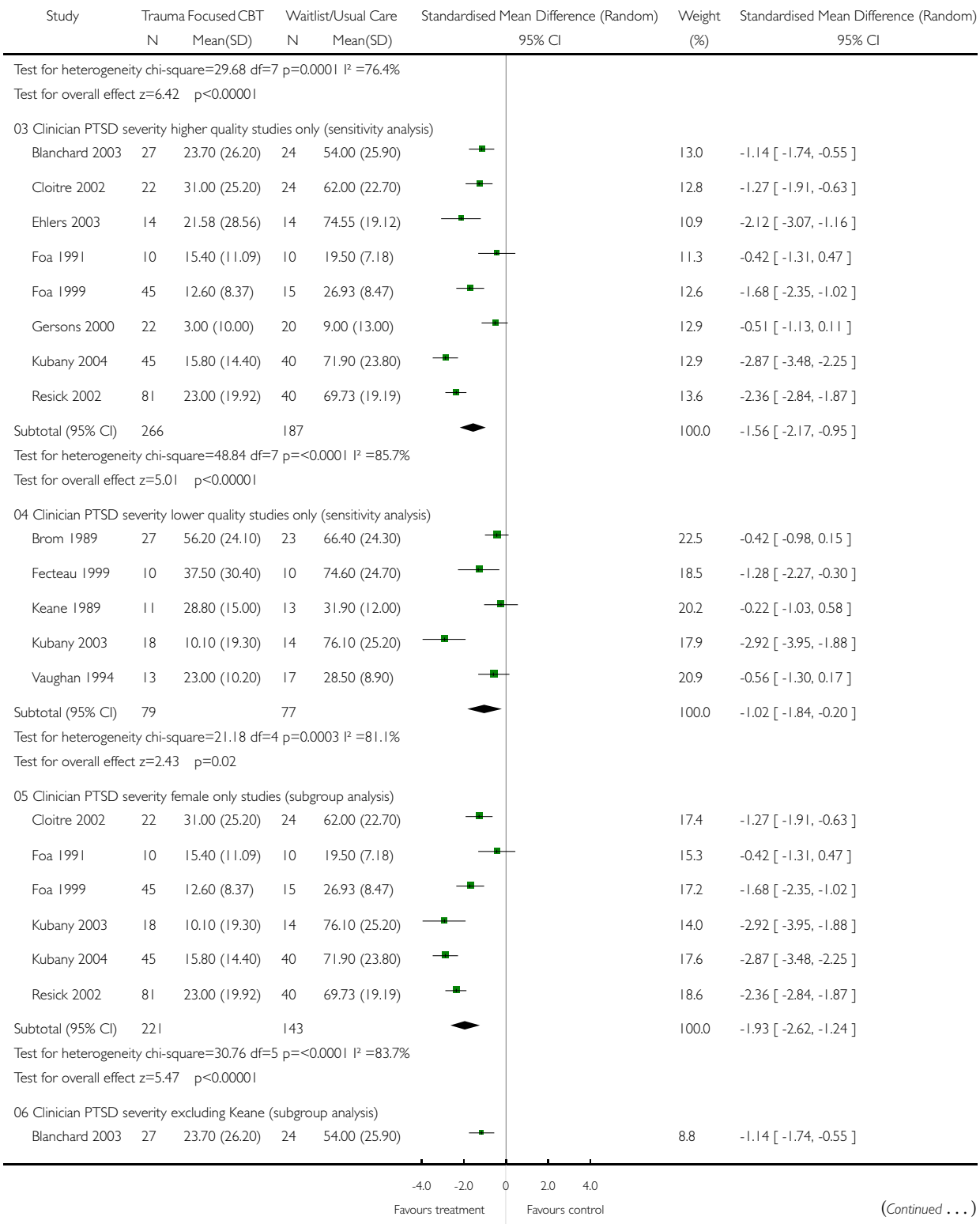

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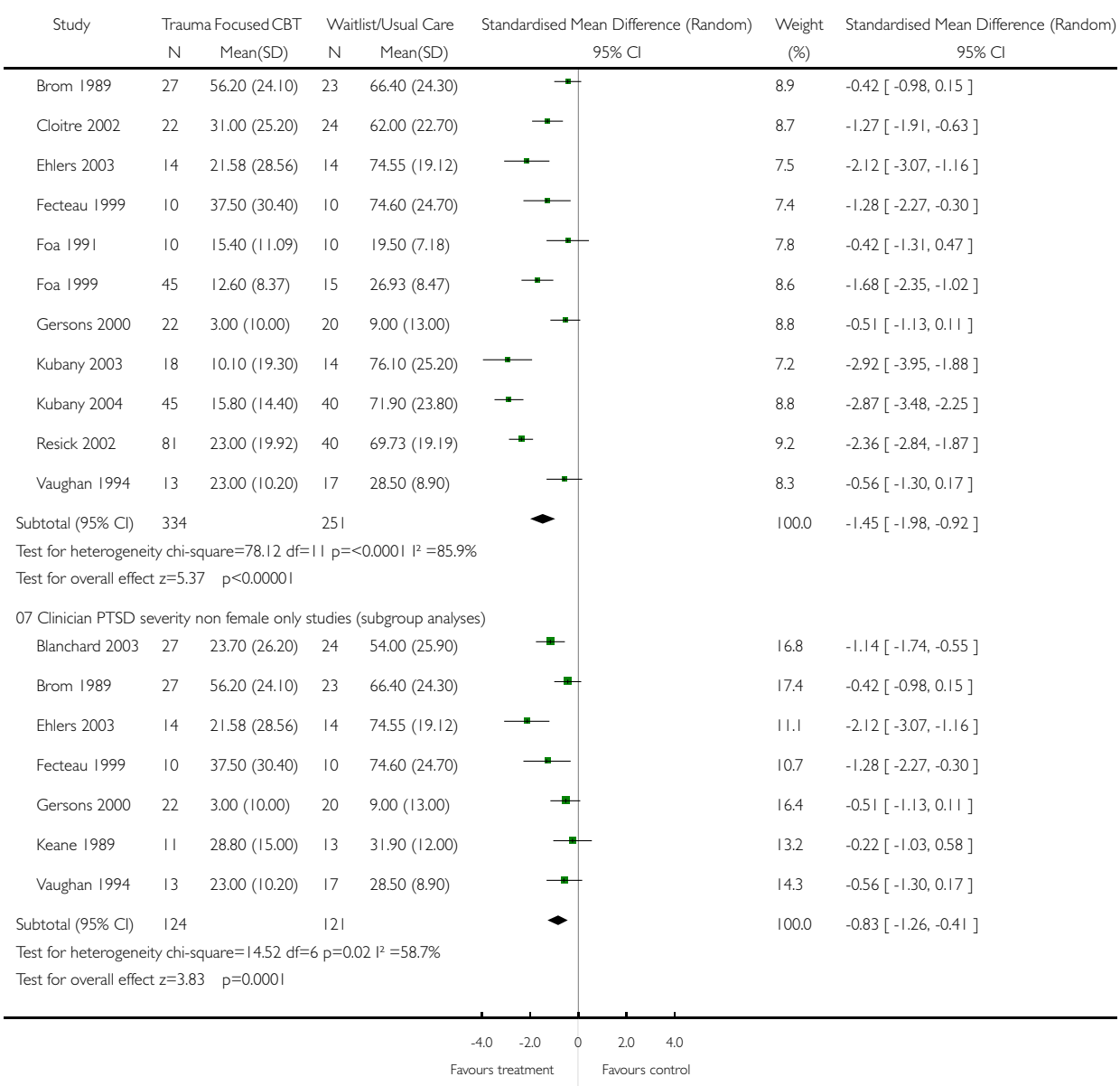

Fig. 4. Comparison 01. Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

01.02 Depression

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 01 Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

Outcome: 02 Depression

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Waitlist/Usual Care N	Waitlist/Usual Care Mean(SD)	Standardised Mean Difference (Random) 95% CI	Weight (%)	Standardised Mean Difference (Random) 95% CI
Blanchard 2003	27	11.60 (12.30)	24	24.00 (12.10)		8.4	-1.00 [-1.59, -0.41]
Cloitre 2002	22	8.00 (7.80)	24	20.00 (11.40)		8.2	-1.20 [-1.83, -0.57]
Cooper 1989	7	12.00 (8.20)	7	17.00 (12.10)		6.3	-0.45 [-1.52, 0.61]
Ehlers 2003	14	10.60 (8.60)	14	19.30 (7.20)		7.5	-1.07 [-1.86, -0.27]
Fecteau 1999	10	20.10 (17.10)	10	24.70 (8.10)		7.1	-0.33 [-1.21, 0.55]
Foa 1991	10	13.40 (14.22)	10	15.40 (9.71)		7.1	-0.16 [-1.04, 0.72]
Foa 1999	44	8.01 (7.65)	14	22.10 (14.97)		8.1	-1.41 [-2.07, -0.75]
Gersons 2000	22	21.00 (7.40)	20	28.50 (9.60)		8.2	-0.86 [-1.50, -0.23]
Kubany 2003	18	3.60 (4.90)	14	30.20 (8.50)		5.7	-3.87 [-5.10, -2.64]
Kubany 2004	45	4.60 (5.30)	40	27.20 (10.50)		8.3	-2.74 [-3.34, -2.14]
Power 2002	21	8.60 (5.80)	24	12.80 (5.60)		8.3	-0.72 [-1.33, -0.12]
Resick 2002	77	9.12 (8.07)	37	22.30 (9.09)		8.9	-1.56 [-2.00, -1.11]
Vaughan 1994	13	11.20 (5.80)	17	13.80 (4.70)		7.8	-0.49 [-1.22, 0.25]
Total (95% CI)	330		255			100.0	-1.20 [-1.65, -0.75]

Test for heterogeneity chi-square=64.91 df=12 p=<0.0001 I^2 =81.5%

Test for overall effect z=5.21 p<0.00001

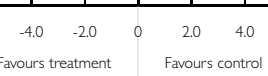

Fig. 5. Comparison 01. Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

01.03 Anxiety

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 01 Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

Outcome: 03 Anxiety

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Waitlist/Usual Care N	Waitlist/Usual Care Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
01 Self report							
Blanchard 2003	27	38.90 (14.00)	24	58.80 (12.30)		12.4	-1.48 [-2.11, -0.86]
Brom 1989	27	45.10 (13.20)	23	48.20 (13.00)		15.6	-0.23 [-0.79, 0.33]
Cloitre 2002	22	36.00 (8.60)	24	55.00 (14.90)		11.1	-1.52 [-2.18, -0.85]
Cooper 1989	7	44.00 (9.00)	7	52.00 (17.30)		4.2	-0.54 [-1.62, 0.53]
Ehlers 2003	14	8.20 (10.80)	14	21.20 (11.20)		7.5	-1.15 [-1.96, -0.34]
Fecteau 1999	10	15.80 (13.80)	10	32.00 (13.30)		5.3	-1.14 [-2.11, -0.18]
Foa 1991	10	41.50 (13.77)	10	49.90 (13.80)		6.0	-0.58 [-1.48, 0.32]
Foa 1999	44	36.30 (13.25)	15	50.40 (13.80)		12.8	-1.04 [-1.66, -0.42]
Gersons 2000	22	7.70 (1.60)	20	9.80 (3.70)		12.4	-0.74 [-1.36, -0.11]
Power 2002	21	9.60 (5.00)	24	14.20 (4.60)		12.7	-0.94 [-1.56, -0.32]
Subtotal (95% CI)	204		171			100.0	-0.94 [-1.16, -0.72]

Test for heterogeneity chi-square=14.01 df=9 p=0.12 I^2 =35.8%

Test for overall effect z=8.31 p<0.00001

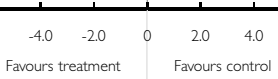

Fig. 6. Comparison 01. Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

01.04 Leaving the study early due to any reason

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 01 Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

Outcome: 04 Leaving the study early due to any reason

Study	Trauma Focused CBT n/N	Waitlist/Usual Care n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
Blanchard 2003	10/37	1/25		2.2	6.76 [0.92, 49.53]
Brom 1989	4/31	1/23		2.1	2.97 [0.35, 24.82]
Cloitre 2002	9/31	3/27		5.8	2.61 [0.79, 8.68]
Ehlers 2003	1/14	1/14		1.8	1.00 [0.07, 14.45]
Fecteau 1999	2/12	1/11		1.9	1.83 [0.19, 17.51]
Foa 1991	4/14	1/10		2.1	2.86 [0.37, 21.87]
Foa 1999	10/55	1/15		2.8	2.73 [0.38, 19.65]
Gersons 2000	1/22	1/20		1.9	0.91 [0.06, 13.59]
Keane 1989	1/11	1/13		1.7	1.18 [0.08, 16.78]
Kubany 2003	1/19	4/18		7.4	0.24 [0.03, 1.92]
Kubany 2004	18/63	22/62		40.2	0.81 [0.48, 1.35]
Power 2002	12/37	5/29		10.2	1.88 [0.75, 4.73]
Resick 2002	33/124	7/47		18.4	1.79 [0.85, 3.76]
Vaughan 1994	1/13	1/17		1.6	1.31 [0.09, 19.00]
Total (95% CI)	483	331		100.0	1.47 [1.07, 2.02]

Total events: 107 (Trauma Focused CBT), 50 (Waitlist/Usual Care)

Test for heterogeneity chi-square=13.31 df=13 p=0.42 I^2 =2.4%

Test for overall effect z=2.37 p=0.02

Fig. 7. Comparison 01. Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

01.05 PTSD diagnosis after treatment

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 01 Trauma Focused CBT/ Exposure Therapy vs Waitlist/Usual Care

Outcome: 05 PTSD diagnosis after treatment

Study	Trauma Focused CBT n/N	Waitlist/Usual Care n/N	Relative Risk (Random) 95% CI	Weight (%)	Relative Risk (Random) 95% CI
Blanchard 2003	16/37	18/25		8.6	0.60 [0.39, 0.94]
Brom 1989	12/31	17/23		7.9	0.52 [0.32, 0.87]
Cloitre 2002	7/31	20/27		6.0	0.30 [0.15, 0.61]
Ehlers 2003	4/14	14/14		4.9	0.29 [0.12, 0.65]
Fecteau 1999	7/12	11/11		8.2	0.58 [0.36, 0.94]
Foa 1991	10/14	10/10		9.9	0.71 [0.51, 0.99]
Foa 1999	27/55	15/15		10.7	0.49 [0.38, 0.64]
Gersons 2000	2/22	10/20		2.3	0.18 [0.05, 0.73]
Keane 1989	4/11	13/13		5.2	0.36 [0.17, 0.79]
Kubany 2003	2/19	18/18		2.6	0.11 [0.03, 0.39]
Peniston 1991	3/15	14/14		3.8	0.20 [0.07, 0.55]
Power 2002	28/37	28/29		11.4	0.78 [0.64, 0.95]
Resick 2002	58/124	44/45		11.4	0.48 [0.39, 0.58]
Vaughan 1994	6/13	17/17		7.0	0.46 [0.26, 0.83]
Total (95% CI)	435	281		100.0	0.47 [0.37, 0.59]

Total events: 186 (Trauma Focused CBT), 249 (Waitlist/Usual Care)

Test for heterogeneity chi-square=49.90 df=13 p=<0.0001 I^2 =73.9%

Test for overall effect z=6.30 p<0.00001

Fig. 8. Comparison 02. Stress Management Therapy vs Waitlist/Usual Care

02.01 Severity of PTSD symptoms - Clinician

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 02 Stress Management Therapy vs Waitlist/Usual Care

Outcome: 01 Severity of PTSD symptoms - Clinician

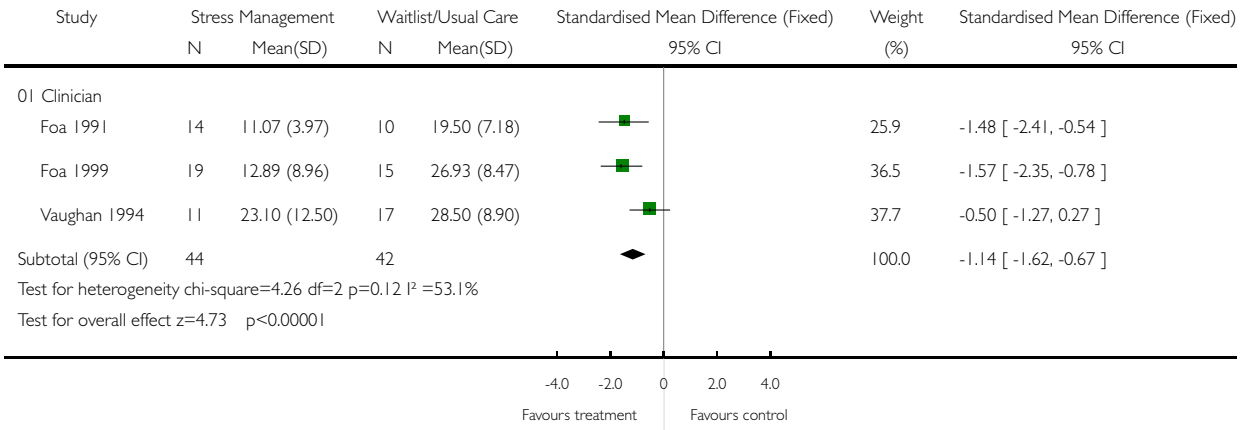

Fig. 9. Comparison 02. Stress Management Therapy vs Waitlist/Usual Care

02.02 Severity of PTSD symptoms - Self-report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 02 Stress Management Therapy vs Waitlist/Usual Care

Outcome: 02 Severity of PTSD symptoms - Self-report

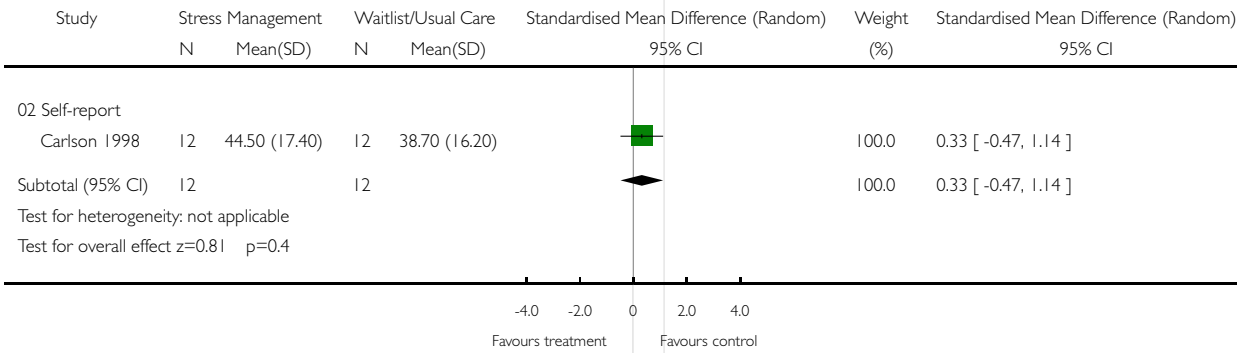

Fig. 10. Comparison 02. Stress Management Therapy vs Waitlist/Usual Care

02.03 Depression

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 02 Stress Management Therapy vs Waitlist/Usual Care

Outcome: 03 Depression

Study	Stress Management N	Stress Management Mean(SD)	Waitlist/Usual care N	Waitlist/Usual care Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Carlson 1998	12	15.80 (12.50)	12	23.50 (12.80)		23.2	-0.59 [-1.41, 0.23]
Foa 1991	14	9.86 (6.76)	10	15.40 (9.71)		22.3	-0.66 [-1.50, 0.18]
Foa 1999	19	10.05 (8.06)	14	22.10 (14.97)		28.6	-1.02 [-1.76, -0.29]
Vaughan 1994	11	10.60 (6.30)	17	13.80 (4.70)		25.9	-0.58 [-1.35, 0.20]
Total (95% CI)	56		53			100.0	-0.73 [-1.12, -0.33]

Test for heterogeneity chi-square=0.90 df=3 p=0.83 I^2 =0.0%

Test for overall effect z=3.60 p=0.0003

Fig. 11. Comparison 02. Stress Management Therapy vs Waitlist/Usual Care

02.04 Anxiety

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 02 Stress Management Therapy vs Waitlist/Usual Care

Outcome: 04 Anxiety

Study	Stress Management N	Stress Management Mean(SD)	Waitlist/Usual Care N	Waitlist/Usual Care Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Carlson 1998	12	46.30 (13.30)	12	51.40 (17.80)		32.2	-0.31 [-1.12, 0.49]
Foa 1991	14	37.15 (7.58)	10	49.90 (13.80)		26.6	-1.16 [-2.05, -0.28]
Foa 1999	19	39.07 (11.55)	15	50.40 (13.80)		41.2	-0.88 [-1.59, -0.17]
Total (95% CI)	45		37			100.0	-0.77 [-1.23, -0.31]

Test for heterogeneity chi-square=2.08 df=2 p=0.35 I^2 =3.8%

Test for overall effect z=3.31 p=0.0009

Fig. 12. Comparison 02. Stress Management Therapy vs Waitlist/Usual Care

02.05 Leaving the study early due to any reason

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 02 Stress Management Therapy vs Waitlist/Usual Care

Outcome: 05 Leaving the study early due to any reason

Study	Stress Management n/N	Waitlist/Usual Care n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
Carlson 1998	1/13	1/12		23.9	0.92 [0.06, 13.18]
Foa 1991	3/17	1/10		28.9	1.76 [0.21, 14.76]
Foa 1999	7/26	1/15		29.1	4.04 [0.55, 29.74]
Vaughan 1994	1/11	1/17		18.0	1.55 [0.11, 22.23]
Total (95% CI)	67	54		100.0	2.19 [0.71, 6.73]

Total events: 12 (Stress Management), 4 (Waitlist/Usual Care)

Test for heterogeneity chi-square=0.87 df=3 p=0.83 I^2 =0.0%

Test for overall effect z=1.36 p=0.2

Fig. 13. Comparison 02. Stress Management Therapy vs Waitlist/Usual Care

02.06 PTSD diagnosis after treatment

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 02 Stress Management Therapy vs Waitlist/Usual Care

Outcome: 06 PTSD diagnosis after treatment

Study	Stress Management n/N	Waitlist/Usual Care n/N	Relative Risk (Random) 95% CI	Weight (%)	Relative Risk (Random) 95% CI
Carlson 1998	11/13	12/12		33.1	0.85 [0.67, 1.07]
Foa 1991	10/17	10/10		24.4	0.59 [0.40, 0.88]
Foa 1999	15/26	15/15		27.9	0.58 [0.42, 0.80]
Vaughan 1994	5/11	17/17		14.7	0.45 [0.24, 0.87]
Total (95% CI)	67	54		100.0	0.64 [0.47, 0.87]

Total events: 41 (Stress Management), 54 (Waitlist/Usual Care)

Test for heterogeneity chi-square=8.63 df=3 p=0.03 I^2 =65.2%

Test for overall effect z=2.86 p=0.004

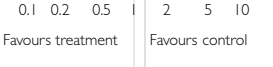

Fig. 14. Comparison 03. Other Therapies vs Waitlist/Usual Care

03.01 Severity of PTSD symptoms - self report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 03 Other Therapies vs Waitlist/Usual Care

Outcome: 01 Severity of PTSD symptoms - self report

Study	Other Therapy N	Other Therapy Mean(SD)	Wait list N	Wait list Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Blanchard 2003	27	27.40 (19.10)	24	36.60 (17.20)		44.0	-0.50 [-1.06, 0.06]
Brom 1989	58	33.20 (19.96)	23	46.50 (15.20)		56.0	-0.70 [-1.20, -0.21]
Total (95% CI)	85		47			100.0	-0.61 [-0.98, -0.24]

Test for heterogeneity chi-square=0.29 df=1 p=0.59 I^2 =0.0%

Test for overall effect z=3.23 p=0.001

Fig. 15. Comparison 03. Other Therapies vs Waitlist/Usual Care

03.02 Severity of PTSD symptoms - clinician

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 03 Other Therapies vs Waitlist/Usual Care

Outcome: 02 Severity of PTSD symptoms - clinician

Study	Other Therapy N	Other Therapy Mean(SD)	Waitlist/Usual Care N	Waitlist/Usual Care Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Blanchard 2003	27	40.10 (25.70)	24	54.00 (25.90)		70.1	-0.53 [-1.09, 0.03]
Foa 1991	11	18.09 (7.13)	10	19.50 (7.18)		29.9	-0.19 [-1.05, 0.67]
Total (95% CI)	38		34			100.0	-0.43 [-0.90, 0.04]

Test for heterogeneity chi-square=0.43 df=1 p=0.51 I^2 =0.0%

Test for overall effect z=1.79 p=0.07

Fig. 16. Comparison 03. Other Therapies vs Waitlist/Usual Care

03.04 Depression

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 03 Other Therapies vs Waitlist/Usual Care

Outcome: 04 Depression

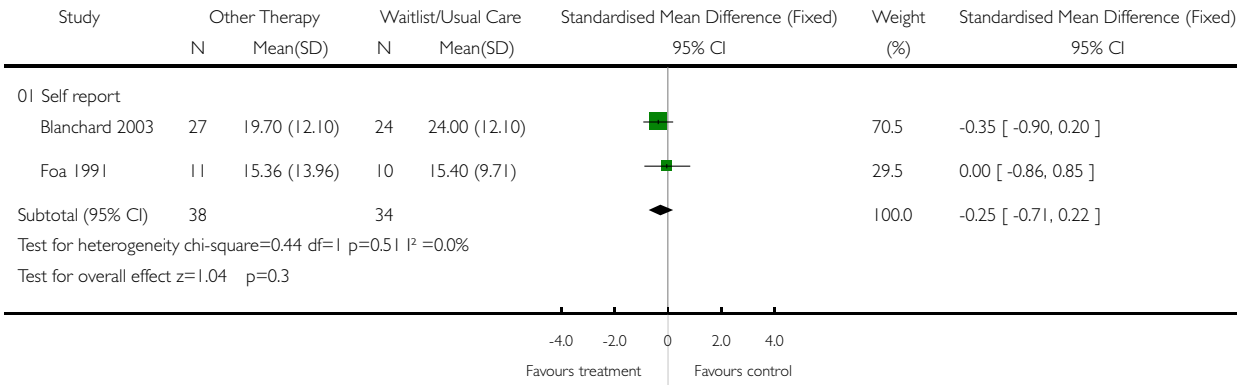

Fig. 17. Comparison 03. Other Therapies vs Waitlist/Usual Care

03.05 Anxiety - Self report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 03 Other Therapies vs Waitlist/Usual Care

Outcome: 05 Anxiety - Self report

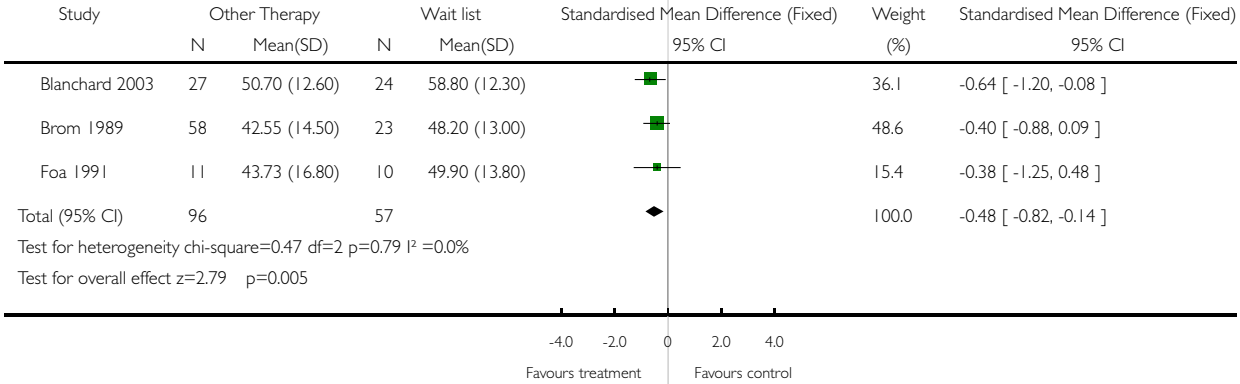

Fig. 18. Comparison 03. Other Therapies vs Waitlist/Usual Care

03.06 Leaving the study early due to any reason

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 03 Other Therapies vs Waitlist/Usual Care

Outcome: 06 Leaving the study early due to any reason

Study	Other Therapy n/N	wait list n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
Blanchard 2003	9/36	1/25		31.2	6.25 [0.84, 46.27]
Brom 1989	8/58	1/23		37.9	3.17 [0.42, 23.96]
Foa 1991	3/14	1/10		30.9	2.14 [0.26, 17.72]
Total (95% CI)	108	58		100.0	3.82 [1.19, 12.29]
Total events: 20 (Other Therapy), 3 (wait list)					
Test for heterogeneity chi-square=0.55 df=2 p=0.76 I^2 =0.0%					
Test for overall effect z=2.24 p=0.02					

Fig. 19. Comparison 03. Other Therapies vs Waitlist/Usual Care

03.07 PTSD diagnosis after treatment

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 03 Other Therapies vs Waitlist/Usual Care

Outcome: 07 PTSD diagnosis after treatment

Study	Other Therapy n/N	wait list n/N	Relative Risk (Random) 95% CI	Weight (%)	Relative Risk (Random) 95% CI
Blanchard 2003	21/36	18/25		31.9	0.81 [0.56, 1.17]
Brom 1989	24/58	17/23		30.9	0.56 [0.38, 0.83]
Foa 1991	13/14	9/10		37.2	1.03 [0.80, 1.33]
Total (95% CI)	108	58		100.0	0.79 [0.53, 1.18]
Total events: 58 (Other Therapy), 44 (wait list)					
Test for heterogeneity chi-square=8.72 df=2 p=0.01 I^2 =77.1%					
Test for overall effect z=1.14 p=0.3					

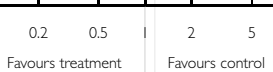

Fig. 20. Comparison 04. Group CBT vs Waitlist/Usual Care

04.01 Severity of PTSD symptoms - self-report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 04 Group CBT vs Waitlist/Usual Care

Outcome: 01 Severity of PTSD symptoms - self-report

Study	Group Therapy N	Group Therapy Mean(SD)	Waitlist/Usual Care N	Waitlist/Usual Care Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Classen 2001	14	30.90 (10.50)	24	39.50 (15.80)		53.0	-0.60 [-1.27, 0.08]
Zlotnick 1997	16	45.76 (34.12)	17	73.06 (29.86)		47.0	-0.83 [-1.55, -0.12]
Total (95% CI)	30		41			100.0	-0.71 [-1.20, -0.22]

Test for heterogeneity chi-square=0.22 df=1 p=0.64 I^2 =0.0%

Test for overall effect z=2.83 p=0.005

Fig. 21. Comparison 04. Group CBT vs Waitlist/Usual Care

04.02 Severity of PTSD symptoms - clinician

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 04 Group CBT vs Waitlist/Usual Care

Outcome: 02 Severity of PTSD symptoms - clinician

Study	Group CBT N	Group CBT Mean(SD)	Waitlist/Usual Care N	Waitlist/Usual Care Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Krakow 2001	45	49.58 (23.96)	52	68.37 (27.26)		100.0	-0.72 [-1.14, -0.31]
Subtotal (95% CI)	45		52			100.0	-0.72 [-1.14, -0.31]

Test for heterogeneity: not applicable

Test for overall effect z=3.44 p=0.0006

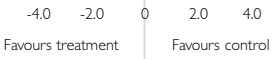

Fig. 22. Comparison 04. Group CBT vs Waitlist/Usual Care

04.03 Leaving the study early due to any reason

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 04 Group CBT vs Waitlist/Usual Care

Outcome: 03 Leaving the study early due to any reason

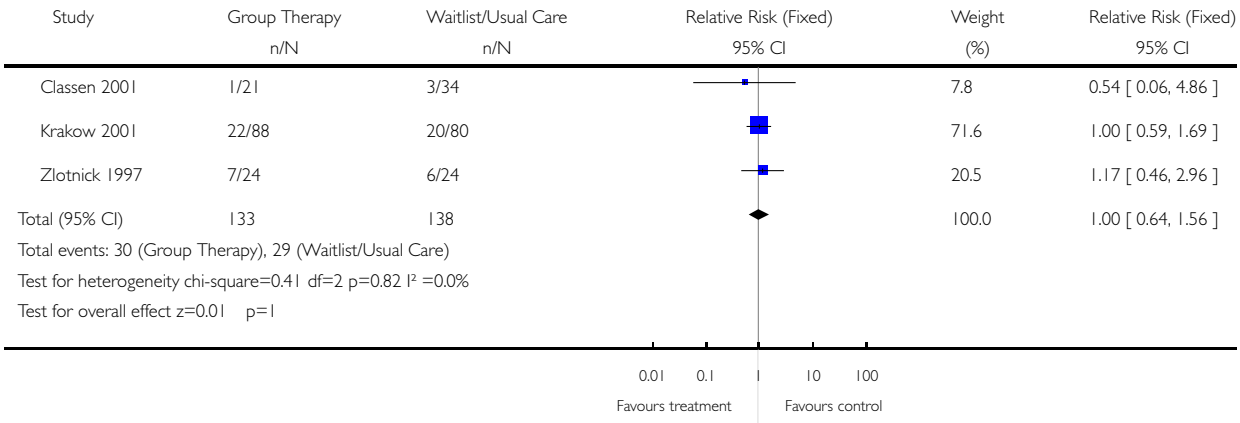

Fig. 23. Comparison 04. Group CBT vs Waitlist/Usual Care

04.04 PTSD diagnosis after treatment

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 04 Group CBT vs Waitlist/Usual Care

Outcome: 04 PTSD diagnosis after treatment

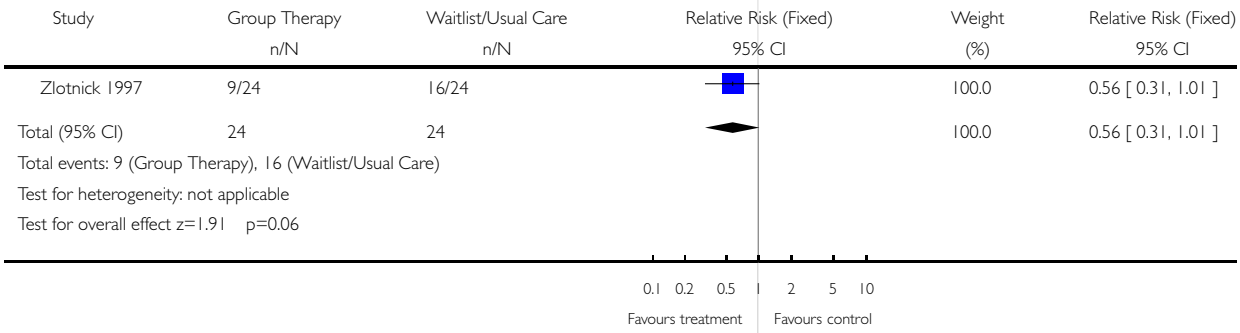

Fig. 24. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.01 Severity of PTSD Symptoms - clinician

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 01 Severity of PTSD Symptoms - clinician

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Stress Management N	Stress Management Mean(SD)	Standardised Mean Difference (Random) 95% CI	Weight (%)	Standardised Mean Difference (Random) 95% CI
Echeburua 1997	10	12.00 (5.54)	10	22.00 (7.61)		11.6	-1.44 [-2.45, -0.43]
Foa 1991	10	15.40 (11.09)	14	11.07 (3.97)		14.5	0.54 [-0.29, 1.37]
Foa 1999	45	12.60 (8.37)	19	12.89 (8.96)		21.0	-0.03 [-0.57, 0.50]
Marks 1998	57	35.25 (28.76)	20	43.70 (24.00)		21.7	-0.30 [-0.81, 0.21]
Taylor 2003	15	25.45 (22.55)	15	47.01 (36.22)		16.3	-0.70 [-1.44, 0.04]
Vaughan 1994	13	23.00 (10.20)	11	23.10 (12.50)		15.0	-0.01 [-0.81, 0.79]
Total (95% CI)	150		89			100.0	-0.27 [-0.71, 0.16]

Test for heterogeneity chi-square=11.25 df=5 p=0.05 I^2 =55.6%

Test for overall effect z=1.25 p=0.2

Fig. 25. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.02 Severity of PTSD symptoms - self report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 02 Severity of PTSD symptoms - self report

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Stress Management N	Stress Management Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Marks 1998	53	16.70 (14.36)	20	22.30 (12.20)		51.9	-0.40 [-0.92, 0.12]
Taylor 2003	15	19.40 (13.39)	15	22.77 (13.47)		27.0	-0.24 [-0.96, 0.47]
Vaughan 1994	13	30.20 (20.50)	11	40.20 (23.10)		21.0	-0.44 [-1.26, 0.37]
Total (95% CI)	81		46			100.0	-0.37 [-0.74, 0.01]

Test for heterogeneity chi-square=0.16 df=2 p=0.92 I^2 =0.0%

Test for overall effect z=1.93 p=0.05

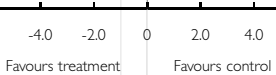

Fig. 26. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.03 Severity of PTSD symptoms - clinician - follow-up (2-5 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 03 Severity of PTSD symptoms - clinician - follow-up (2-5 months)

Study	Trauma Focused CBT		Stress Management		Standardised Mean Difference (Fixed)	Weight	Standardised Mean Difference (Fixed)
	N	Mean(SD)	N	Mean(SD)	95% CI	(%)	95% CI
Echeburua 1997	10	5.90 (1.85)	10	19.90 (12.11)		12.3	-1.55 [-2.57, -0.52]
Foa 1991	9	10.44 (8.22)	9	12.33 (9.59)		15.1	-0.20 [-1.13, 0.73]
Foa 1999	19	11.64 (9.02)	16	15.06 (13.33)		29.1	-0.30 [-0.97, 0.37]
Taylor 2003	15	23.60 (22.64)	15	42.33 (23.27)		23.3	-0.79 [-1.54, -0.05]
Vaughan 1994	13	20.60 (14.10)	11	19.60 (10.90)		20.2	0.08 [-0.73, 0.88]
Total (95% CI)	66		61			100.0	-0.48 [-0.84, -0.12]

Test for heterogeneity chi-square=7.30 df=4 p=0.12 I^2 =45.2%

Test for overall effect z=2.60 p=0.009

Fig. 27. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.04 Severity of PTSD symptoms - self report - follow-up (2-5 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 04 Severity of PTSD symptoms - self report - follow-up (2-5 months)

Study	Trauma Focused CBT		Stress Management		Standardised Mean Difference (Fixed)	Weight	Standardised Mean Difference (Fixed)
	N	Mean(SD)	N	Mean(SD)	95% CI	(%)	95% CI
Taylor 2003	15	15.20 (10.78)	15	23.36 (12.95)		54.3	-0.67 [-1.40, 0.07]
Vaughan 1994	13	28.90 (22.50)	11	32.80 (20.60)		45.7	-0.17 [-0.98, 0.63]
Total (95% CI)	28		26			100.0	-0.44 [-0.99, 0.10]

Test for heterogeneity chi-square=0.78 df=1 p=0.38 I^2 =0.0%

Test for overall effect z=1.59 p=0.1

Fig. 28. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.05 Depression

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 05 Depression

Study	Trauma Focused CBT N	Mean(SD)	Stress Management N	Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Echeburua 1997	10	6.20 (3.19)	10	10.80 (8.90)		12.8	-0.66 [-1.56, 0.25]
Foa 1991	10	13.40 (14.22)	14	9.86 (6.76)		15.7	0.33 [-0.49, 1.14]
Foa 1999	44	8.01 (7.65)	19	10.05 (8.06)		35.9	-0.26 [-0.80, 0.28]
Taylor 2003	15	13.00 (10.60)	15	21.00 (13.80)		19.4	-0.63 [-1.37, 0.10]
Vaughan 1994	13	20.60 (12.50)	11	20.40 (14.10)		16.3	0.01 [-0.79, 0.82]
Total (95% CI)	92		69			100.0	-0.25 [-0.57, 0.08]

Test for heterogeneity chi-square=4.15 df=4 p=0.39 I^2 =3.5%

Test for overall effect z=1.49 p=0.1

Fig. 29. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.06 Depression - follow-up (2-5 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 06 Depression - follow-up (2-5 months)

Study	Trauma Focused CBT N	Mean(SD)	Stress Management N	Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Echeburua 1997	10	6.70 (4.83)	10	11.30 (6.62)		13.8	-0.76 [-1.68, 0.15]
Foa 1991	9	6.38 (7.56)	9	10.33 (11.68)		13.2	-0.38 [-1.32, 0.55]
Foa 1999	39	10.90 (8.90)	16	14.58 (12.16)		33.6	-0.37 [-0.95, 0.22]
Taylor 2003	15	12.70 (8.90)	15	16.70 (10.80)		22.0	-0.39 [-1.12, 0.33]
Vaughan 1994	13	15.60 (8.10)	11	11.90 (7.20)		17.4	0.46 [-0.35, 1.28]
Total (95% CI)	86		61			100.0	-0.28 [-0.62, 0.06]

Test for heterogeneity chi-square=4.47 df=4 p=0.35 I^2 =10.6%

Test for overall effect z=1.64 p=0.1

Fig. 30. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.07 Anxiety

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 07 Anxiety

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Stress Management N	Stress Management Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Echeburua 1997	10	17.60 (9.45)	10	26.50 (15.31)		17.0	-0.67 [-1.58, 0.24]
Foa 1991	10	41.50 (13.77)	14	37.15 (7.58)		20.8	0.40 [-0.42, 1.22]
Foa 1999	44	36.30 (13.25)	15	39.07 (11.55)		40.5	-0.21 [-0.80, 0.37]
Vaughan 1994	13	52.40 (15.90)	11	52.40 (18.30)		21.7	0.00 [-0.80, 0.80]
Total (95% CI)	77		50			100.0	-0.12 [-0.49, 0.26]

Test for heterogeneity chi-square=3.12 df=3 p=0.37 I^2 =4.0%

Test for overall effect z=0.62 p=0.5

Fig. 31. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.08 Anxiety - Follow-up (2-5 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 08 Anxiety - Follow-up (2-5 months)

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Stress Management N	Stress Management Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Echeburua 1997	10	18.90 (10.67)	10	25.00 (17.16)		18.9	-0.41 [-1.30, 0.48]
Foa 1991	9	32.38 (6.99)	9	50.00 (19.35)		14.4	-1.15 [-2.17, -0.14]
Foa 1999	39	40.45 (13.53)	16	41.26 (14.02)		44.0	-0.06 [-0.64, 0.52]
Vaughan 1994	13	50.30 (16.10)	11	45.40 (9.90)		22.7	0.35 [-0.46, 1.16]
Total (95% CI)	71		46			100.0	-0.19 [-0.58, 0.20]

Test for heterogeneity chi-square=5.56 df=3 p=0.13 I^2 =46.1%

Test for overall effect z=0.97 p=0.3

Fig. 32. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.09 Leaving the study early due to any reason

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 09 Leaving the study early due to any reason

Study	Trauma Focused CBT n/N	Stress Management n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
Echeburua 1997	1/10	1/10		5.0	1.00 [0.07, 13.87]
Foa 1991	4/14	3/17		13.5	1.62 [0.43, 6.06]
Foa 1999	10/55	7/26		47.3	0.68 [0.29, 1.57]
Marks 1998	9/66	1/21		7.5	2.86 [0.38, 21.30]
Taylor 2003	7/22	4/19		21.3	1.51 [0.52, 4.38]
Vaughan 1994	1/13	1/11		5.4	0.85 [0.06, 12.01]
Total (95% CI)	180	104		100.0	1.17 [0.69, 2.00]

Total events: 32 (Trauma Focused CBT), 17 (Stress Management)

Test for heterogeneity chi-square=2.91 df=5 p=0.71 I^2 =0.0%

Test for overall effect z=0.58 p=0.6

Fig. 33. Comparison 05. Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

05.10 PTSD diagnosis after treatment

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 05 Trauma Focused CBT/ Exposure Therapy vs Stress Management Therapy

Outcome: 10 PTSD diagnosis after treatment

Study	Trauma Focused CBT n/N	Stress Management n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
Echeburua 1997	1/10	9/10		12.3	0.11 [0.02, 0.72]
Foa 1991	10/14	10/17		12.4	1.21 [0.72, 2.04]
Foa 1999	28/55	15/26		27.9	0.88 [0.58, 1.34]
Marks 1998	27/66	10/21		20.8	0.86 [0.50, 1.47]
Taylor 2003	9/22	13/19		19.1	0.60 [0.33, 1.08]
Vaughan 1994	6/13	5/11		7.4	1.02 [0.42, 2.43]
Total (95% CI)	180	104		100.0	0.78 [0.61, 0.99]

Total events: 81 (Trauma Focused CBT), 62 (Stress Management)

Test for heterogeneity chi-square=8.59 df=5 p=0.13 I^2 =41.8%

Test for overall effect z=2.03 p=0.04

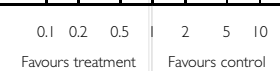

Fig. 34. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.01 Severity of PTSD symptoms - clinician

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 01 Severity of PTSD symptoms - clinician

Study	Trauma Focused CBT N	Mean(SD)	Other Therapy N	Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Blanchard 2003	27	23.70 (26.20)	27	40.10 (25.70)		49.4	-0.62 [-1.17, -0.08]
Bryant 2003	30	25.93 (10.00)	15	50.93 (26.08)		30.7	-1.45 [-2.14, -0.75]
Foa 1991	10	15.40 (11.09)	11	18.09 (7.13)		19.9	-0.28 [-1.14, 0.58]
Total (95% CI)	67		53			100.0	-0.81 [-1.19, -0.42]

Test for heterogeneity chi-square=5.12 df=2 p=0.08 I^2 =60.9%

Test for overall effect z=4.11 p=0.00004

Fig. 35. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.02 Severity of PTSD symptoms - clinician - follow-up (3 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 02 Severity of PTSD symptoms - clinician - follow-up (3 months)

Study	Trauma Focused CBT N	Mean(SD)	Other Therapy N	Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Blanchard 2003	26	22.10 (24.80)	26	40.40 (29.80)		74.3	-0.66 [-1.22, -0.10]
Foa 1991	9	10.44 (8.22)	9	16.11 (9.37)		25.7	-0.61 [-1.56, 0.34]
Total (95% CI)	35		35			100.0	-0.65 [-1.13, -0.16]

Test for heterogeneity chi-square=0.01 df=1 p=0.94 I^2 =0.0%

Test for overall effect z=2.63 p=0.009

Fig. 36. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.03 Severity of PTSD symptoms - self report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 03 Severity of PTSD symptoms - self report

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Other Therapy N	Other Therapy Mean(SD)	Standardised Mean Difference (Random) 95% CI	Weight (%)	Standardised Mean Difference (Random) 95% CI
Blanchard 2003	27	12.10 (14.90)	27	27.40 (19.10)		34.0	-0.88 [-1.44, -0.32]
Brom 1989	27	28.00 (19.50)	50	33.20 (19.95)		34.9	-0.26 [-0.73, 0.21]
Bryant 2003	30	23.83 (7.71)	15	52.73 (16.25)		31.1	-2.53 [-3.36, -1.70]
Total (95% CI)	84		92			100.0	-1.18 [-2.32, -0.03]

Test for heterogeneity chi-square=21.90 df=2 p=<0.0001 I^2 =90.9%

Test for overall effect z=2.01 p=0.04

Fig. 37. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.04 Severity of PTSD symptoms - self report - follow-up (2-5 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 04 Severity of PTSD symptoms - self report - follow-up (2-5 months)

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Other Therapy N	Other Therapy Mean(SD)	Standardised Mean Difference (Random) 95% CI	Weight (%)	Standardised Mean Difference (Random) 95% CI
Blanchard 2003	27	12.20 (13.60)	27	24.00 (20.01)		48.2	-0.68 [-1.23, -0.13]
Brom 1989	27	31.30 (21.10)	50	29.35 (19.66)		51.8	0.10 [-0.37, 0.56]
Total (95% CI)	54		77			100.0	-0.28 [-1.04, 0.48]

Test for heterogeneity chi-square=4.43 df=1 p=0.04 I^2 =77.4%

Test for overall effect z=0.72 p=0.5

Fig. 38. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.05 Depression - self report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 05 Depression - self report

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Other Therapy N	Other Therapy Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Blanchard 2003	27	11.60 (12.30)	27	19.70 (12.10)		47.3	-0.65 [-1.20, -0.11]
Bryant 2003	30	10.73 (9.82)	15	19.87 (8.44)		33.3	-0.96 [-1.61, -0.30]
Foa 1991	10	13.40 (14.22)	11	15.36 (13.96)		19.4	-0.13 [-0.99, 0.72]
Total (95% CI)	67		53			100.0	-0.65 [-1.03, -0.28]

Test for heterogeneity chi-square=2.24 df=2 p=0.33 I^2 =10.5%

Test for overall effect z=3.40 p=0.0007

Fig. 39. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.06 Anxiety - self report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 06 Anxiety - self report

Study	Trauma Focused CBT N	Trauma Focused CBT Mean(SD)	Other Therapy N	Other Therapy Mean(SD)	Standardised Mean Difference (Random) 95% CI	Weight (%)	Standardised Mean Difference (Random) 95% CI
Blanchard 2003	27	38.90 (14.00)	27	50.70 (12.60)		26.5	-0.87 [-1.43, -0.31]
Brom 1989	27	45.10 (13.20)	50	42.55 (14.50)		28.2	0.18 [-0.29, 0.65]
Bryant 2003	30	36.73 (11.23)	15	49.07 (11.68)		24.5	-1.07 [-1.73, -0.40]
Foa 1991	10	41.50 (13.77)	11	43.73 (16.80)		20.8	-0.14 [-1.00, 0.72]
Total (95% CI)	94		103			100.0	-0.47 [-1.11, 0.17]

Test for heterogeneity chi-square=12.85 df=3 p=0.005 I^2 =76.7%

Test for overall effect z=1.45 p=0.1

Fig. 40. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.07 Depression - self-report - follow-up (2-5 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 07 Depression - self-report - follow-up (2-5 months)

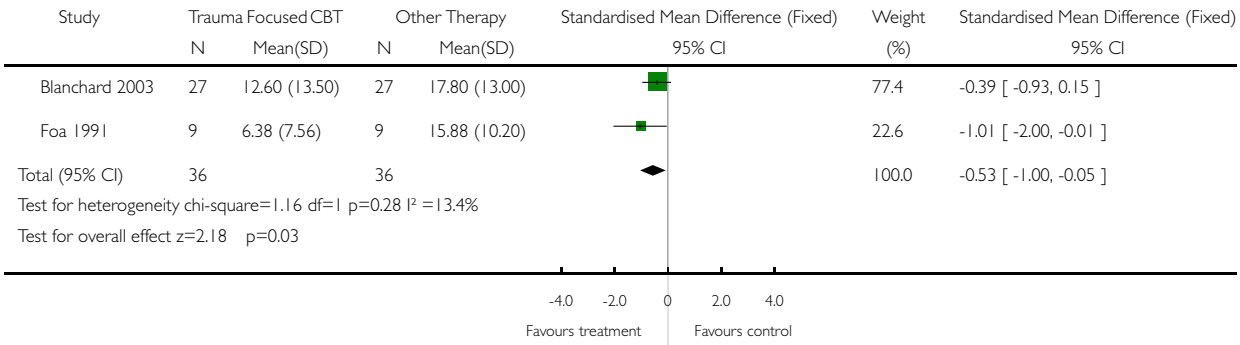

Fig. 41. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.08 Anxiety - self-report - follow-up (2-5 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 08 Anxiety - self-report - follow-up (2-5 months)

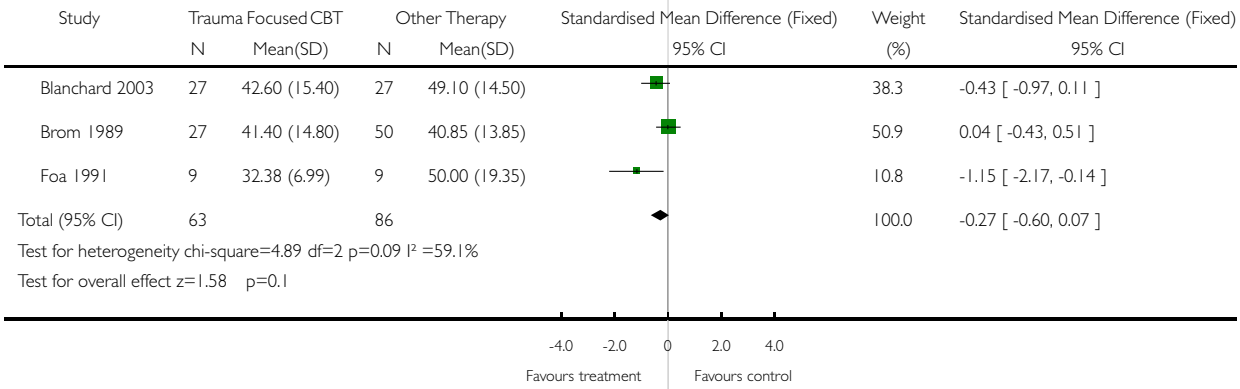

Fig. 42. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.09 PTSD diagnosis after treatment

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 09 PTSD diagnosis after treatment

Study	Trauma Focused CBT n/N	Other Therapy n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
Blanchard 2003	16/37	21/36		26.3	0.74 [0.47, 1.18]
Brom 1989	12/31	23/58		19.8	0.98 [0.57, 1.68]
Bryant 2003	17/40	12/18		20.5	0.64 [0.39, 1.04]
Foa 1991	10/14	13/14		16.1	0.77 [0.54, 1.10]
Neuner 2004	4/14	19/24		17.3	0.36 [0.15, 0.85]
Total (95% CI)	136	150		100.0	0.71 [0.56, 0.89]

Total events: 59 (Trauma Focused CBT), 88 (Other Therapy)

Test for heterogeneity chi-square=4.17 df=4 p=0.38 I^2 =4.0%

Test for overall effect z=2.91 p=0.004

Fig. 43. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.10 Leaving the study early due to any reason

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 10 Leaving the study early due to any reason

Study	Trauma Focused CBT n/N	Other Therapies n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
Blanchard 2003	10/37	9/36		40.1	1.08 [0.50, 2.35]
Brom 1989	4/31	8/58		24.5	0.94 [0.31, 2.86]
Bryant 2003	10/40	3/18		18.2	1.50 [0.47, 4.80]
Foa 1991	4/14	2/14		8.8	2.00 [0.43, 9.21]
Neuner 2004	0/16	2/26		8.5	0.32 [0.02, 6.22]
Total (95% CI)	138	152		100.0	1.14 [0.68, 1.90]

Total events: 28 (Trauma Focused CBT), 24 (Other Therapies)

Test for heterogeneity chi-square=1.58 df=4 p=0.81 I^2 =0.0%

Test for overall effect z=0.49 p=0.6

Fig. 44. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.11 Severity of PTSD symptoms - clinician - follow-up (6-9 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 11 Severity of PTSD symptoms - clinician - follow-up (6-9 months)

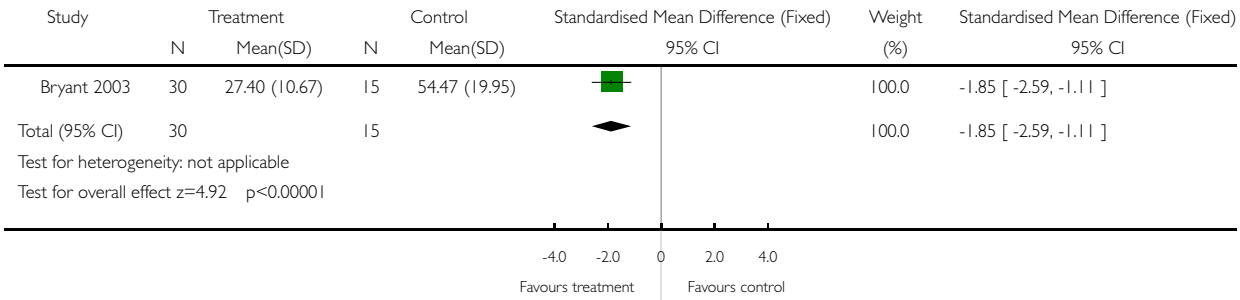

Fig. 45. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.12 Severity of PTSD symptoms - self-report - follow-up (6-9 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 12 Severity of PTSD symptoms - self-report - follow-up (6-9 months)

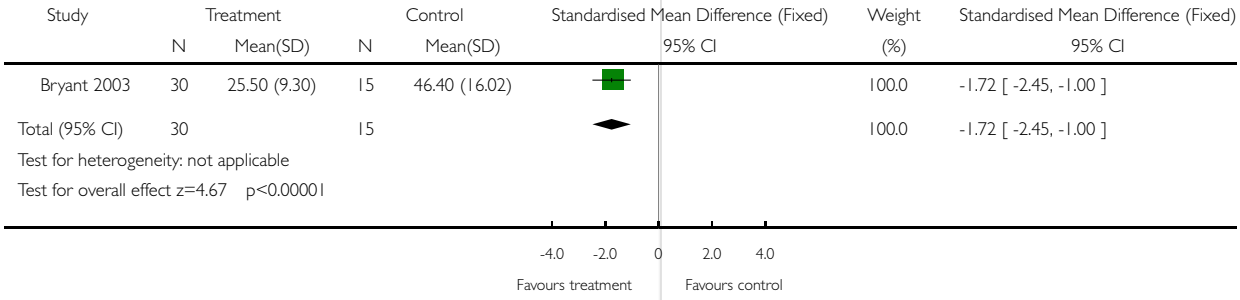

Fig. 46. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.13 Depression - follow-up (6-9 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 13 Depression - follow-up (6-9 months)

Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Bryant 2003	30	10.50 (9.17)	15	20.27 (8.22)		100.0	-1.08 [-1.74, -0.42]
Total (95% CI)	30		15			100.0	-1.08 [-1.74, -0.42]

Test for heterogeneity: not applicable

Test for overall effect z=3.20 p=0.001

Fig. 47. Comparison 06. Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

06.14 Anxiety - follow-up (6-9 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 06 Trauma Focused CBT/Exposure Therapy vs Other Therapies (supportive counselling/hypnotherapy/psychodynamic)

Outcome: 14 Anxiety - follow-up (6-9 months)

Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Bryant 2003	30	37.90 (11.80)	15	51.13 (9.06)		100.0	-1.18 [-1.85, -0.51]
Total (95% CI)	30		15			100.0	-1.18 [-1.85, -0.51]

Test for heterogeneity: not applicable

Test for overall effect z=3.46 p=0.0005

Fig. 48. Comparison 07. Stress Management Therapy vs Other Therapies

07.01 Severity of PTSD symptoms - Clincian

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 07 Stress Management Therapy vs Other Therapies

Outcome: 01 Severity of PTSD symptoms - Clincian

Study	Stress Management N	Mean(SD)	Other Therapy N	Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Foa 1991	14	11.07 (3.97)	11	18.09 (7.13)		100.0	-1.22 [-2.09, -0.35]
Total (95% CI)	14		11			100.0	-1.22 [-2.09, -0.35]

Test for heterogeneity: not applicable

Test for overall effect z=2.74 p=0.006

Fig. 49. Comparison 07. Stress Management Therapy vs Other Therapies

07.02 Anxiety - Self-report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 07 Stress Management Therapy vs Other Therapies

Outcome: 02 Anxiety - Self-report

Study	Stress Management N	Mean(SD)	Other Therapy N	Mean(SD)	Standardised Mean Difference (Fixed) 95% CI	Weight (%)	Standardised Mean Difference (Fixed) 95% CI
Foa 1991	14	37.15 (7.58)	11	43.73 (16.80)		100.0	-0.51 [-1.32, 0.29]
Total (95% CI)	14		11			100.0	-0.51 [-1.32, 0.29]

Test for heterogeneity: not applicable

Test for overall effect z=1.24 p=0.2

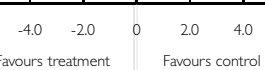

Fig. 50. Comparison 07. Stress Management Therapy vs Other Therapies

07.03 Depression - Self-report

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 07 Stress Management Therapy vs Other Therapies

Outcome: 03 Depression - Self-report

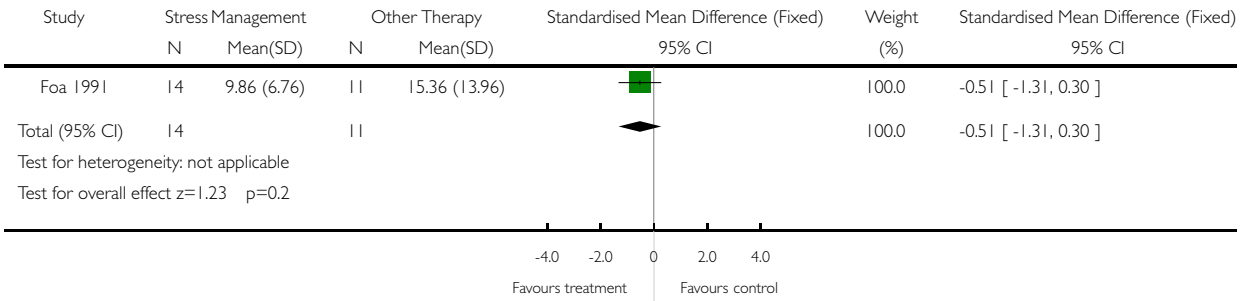

Fig. 51. Comparison 07. Stress Management Therapy vs Other Therapies

07.04 Severity of PTSD symptoms - clinician - follow-up (3 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 07 Stress Management Therapy vs Other Therapies

Outcome: 04 Severity of PTSD symptoms - clinician - follow-up (3 months)

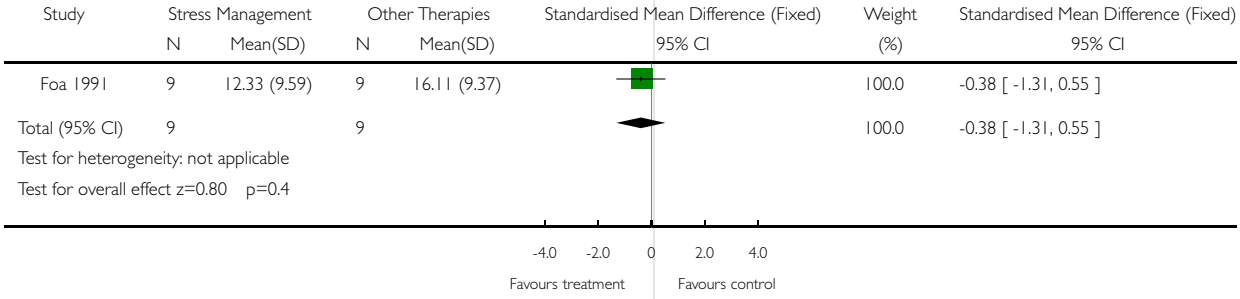

Fig. 52. Comparison 07. Stress Management Therapy vs Other Therapies

07.05 Anxiety - self-report - follow-up (3 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 07 Stress Management Therapy vs Other Therapies

Outcome: 05 Anxiety - self-report - follow-up (3 months)

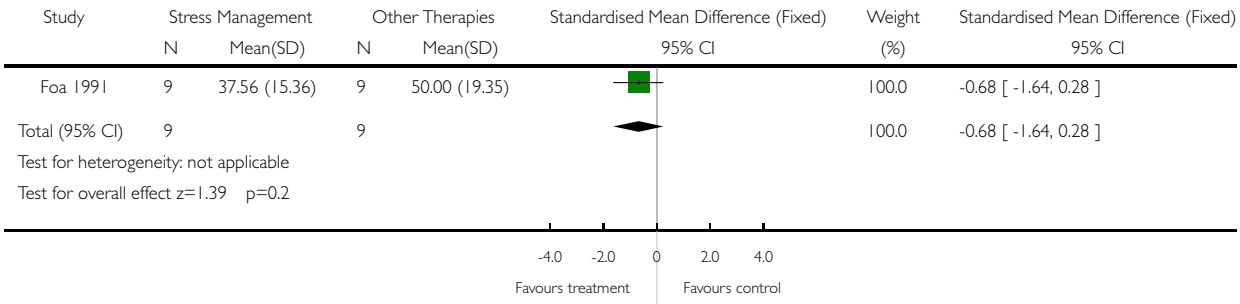

Fig. 53. Comparison 07. Stress Management Therapy vs Other Therapies

07.06 Depression - self-report - follow-up (3 months)

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 07 Stress Management Therapy vs Other Therapies

Outcome: 06 Depression - self-report - follow-up (3 months)

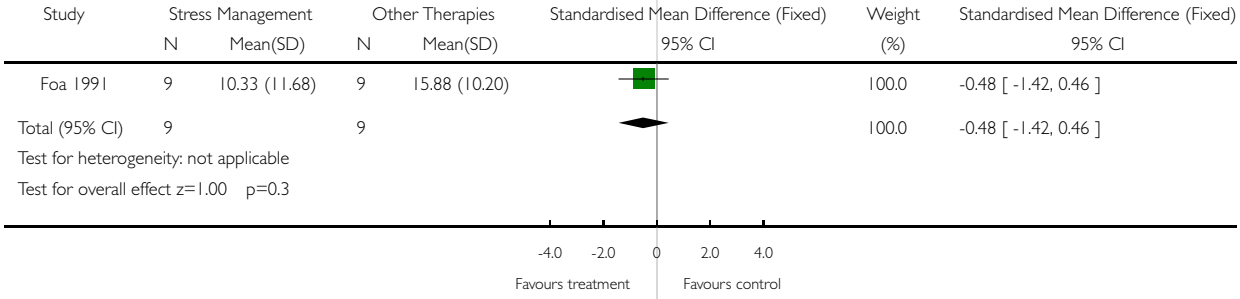

Fig. 54. Comparison 07. Stress Management Therapy vs Other Therapies

07.07 PTSD diagnosis after treatment

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 07 Stress Management Therapy vs Other Therapies

Outcome: 07 PTSD diagnosis after treatment

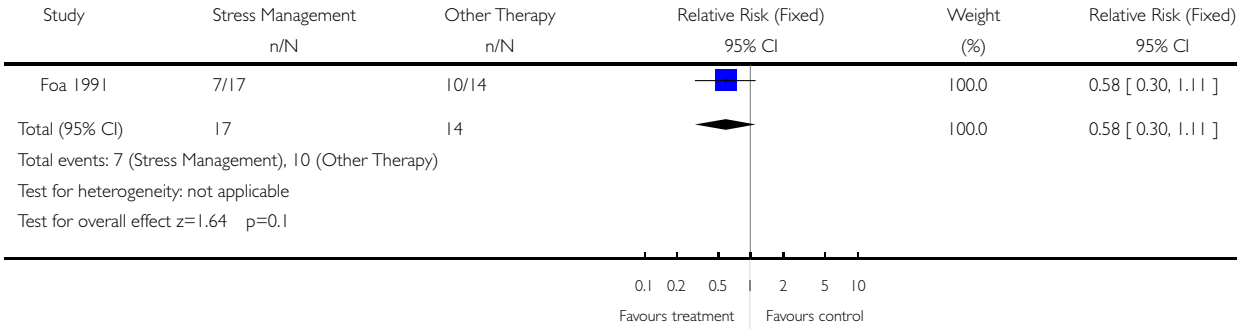

Fig. 55. Comparison 07. Stress Management Therapy vs Other Therapies

07.08 Leaving the study early due to any reason

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 07 Stress Management Therapy vs Other Therapies

Outcome: 08 Leaving the study early due to any reason

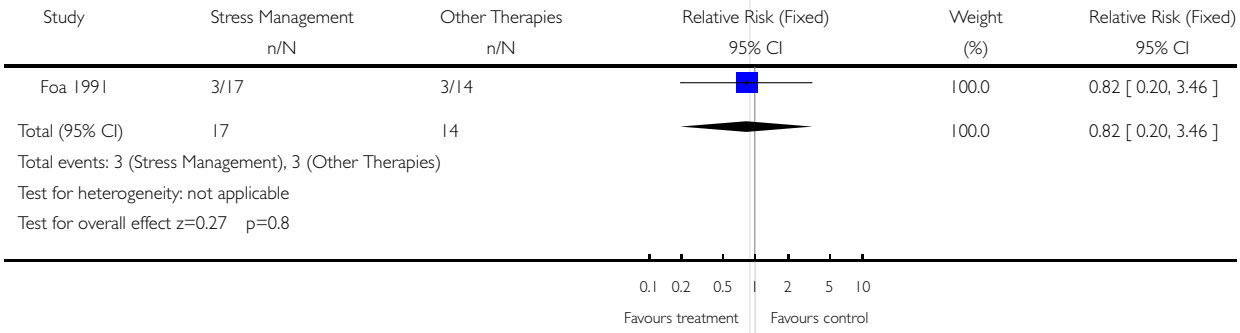

Fig. 56. Comparison 08. Group CBT (trauma focused) vs Group CBT (non-trauma focused)

08.01 Severity of PTSD symptoms

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 08 Group CBT (trauma focused) vs Group CBT (non-trauma focused)

Outcome: 01 Severity of PTSD symptoms

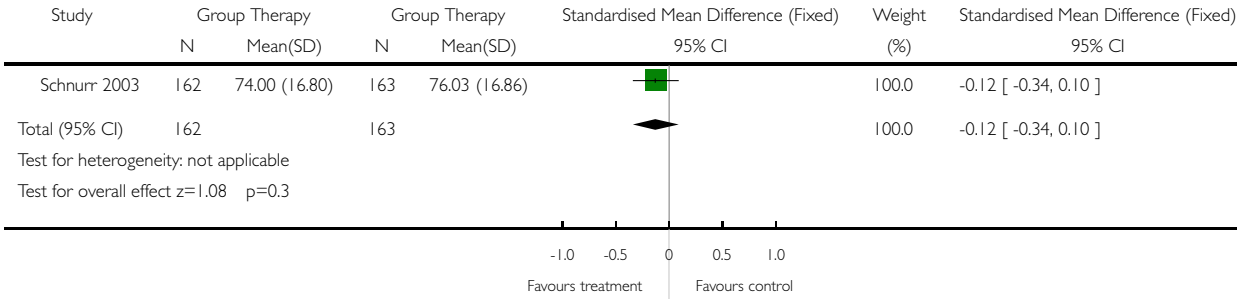

Fig. 57. Comparison 08. Group CBT (trauma focused) vs Group CBT (non-trauma focused)

08.02 Leaving the study early due to any reason

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 08 Group CBT (trauma focused) vs Group CBT (non-trauma focused)

Outcome: 02 Leaving the study early due to any reason

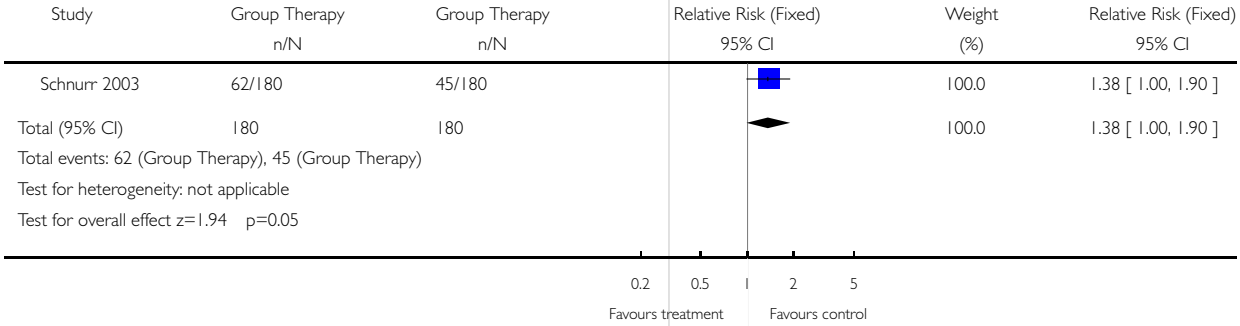

Fig. 58. Comparison 08. Group CBT (trauma focused) vs Group CBT (non-trauma focused)

08.03 PTSD diagnosis after treatment

Review: Psychological treatment of post-traumatic stress disorder (PTSD)

Comparison: 08 Group CBT (trauma focused) vs Group CBT (non-trauma focused)

Outcome: 03 PTSD diagnosis after treatment