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Multiple session early psychological interventions for the prevention of post-traumatic stress disorder (Review)

Roberts NP, Kitchiner NJ, Kenardy J, Bisson JI

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TABLE OF CONTENTS

[Intervention Review]

Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

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ABSTRACT

Background

The prevention of long-term psychological distress following traumatic events is a major concern. Systematic reviews have suggested that individual Psychological Debriefing is not an effective intervention at preventing post traumatic stress disorder (PTSD). Recently other forms of intervention have been developed with the aim of preventing PTSD.

Objectives

To examine the efficacy of multiple session early psychological interventions commenced within three months of a traumatic event aimed at preventing PTSD. Single session individual/group psychological interventions were excluded.

Search methods

Computerised databases were searched systematically, the most recent search was conducted in August 2008. The Journal of Traumatic Stress and the Journal of Consulting and Clinical Psychology were handsearched for the last two years. Personal communication was undertaken with key experts in the field.

Selection criteria

Randomised controlled trials of any multiple session early psychological intervention or treatment (two or more sessions) designed to prevent symptoms of PTSD.

Data collection and analysis

Data were entered using Review Manager software. The methodological quality of included studies was assessed individually by two review authors. Data were analysed for summary effects using Review Manager 4.2. Mean difference was used for meta-analysis of continuous outcomes and relative risk for dichotomous outcomes.

Main results

Eleven studies with a total of 941 participants were found to have evaluated brief psychological interventions aimed at preventing PTSD in individuals exposed to a specific traumatic event, examining a heterogeneous range of interventions. Eight studies were entered into meta-analysis. There was no observable difference between treatment and control conditions on primary outcome measures for these interventions at initial outcome (k=5, n=479; RR 0.84; 95% CI 0.60 to 1.17). There was a trend for increased self-report of PTSD symptoms at 3 to 6 month follow-up in those who received an intervention (k=4, n=292; SMD 0.23; 95% CI 0.00 to 0.46). Two studies compared a memory structuring intervention against supportive listening. There was no evidence supporting the efficacy of this intervention.

Authors' conclusions

The results suggest that no psychological intervention can be recommended for routine use following traumatic events and that multiple session interventions, like single session interventions, may have an adverse effect on some individuals. The clear practice implication of this is that, at present, multiple session interventions aimed at all individuals exposed to traumatic events should not be used. Further, better designed studies that explore new approaches to early intervention are now required.

PLAIN LANGUAGE SUMMARY

Multiple session early psychological interventions for prevention of post-traumatic stress disorder

Traumatic events can have a significant impact on individuals', families' and communities' abilities to cope. In the past, single session interventions such as psychological debriefing were widely used with the aim of preventing continuing psychological difficulties. However, previous reviews have found that single session individual interventions have not been effective at preventing post -traumatic stress disorder (PTSD). A range of other forms of intervention have been developed to try to prevent individuals exposed to trauma developing PTSD. This review evaluated the results of 11 studies that tested a diverse range of psychological interventions aimed at preventing PTSD. The results did not find any evidence to support the use of an intervention offered to everyone. There was some evidence that multiple session interventions may result in worse outcome than no intervention for some individuals. Further research is required to evaluate the most effective ways of providing psychological help in the early stages after a traumatic event.

BACKGROUND

Description of the condition

There is now a large body of literature to show that traumatic experience can cause significant psychological difficulties for large numbers of people, through events such as natural disasters (e.g. McFarlane 1988; Goenjian 1993), man made disasters (e.g. Gleser 1981; Baum 1983; Green 1990), military combat (Kulka 1990), rape (Kilpatrick 1987; Crummier 1991), violent crime (e.g. Hough 1990; North 1994) and road traffic accidents (Ehlers 1998). Many individuals show great resilience in the face of such experiences and will manifest short-lived or sub-clinical stress reactions that diminish over time (Bonanno 2004). Most people recover without medical or psychological assistance (McNally 2003). Nevertheless, a range of psychological difficulties may develop following trauma in some of those who have been exposed. These include depressive reactions, phobic reactions and other anxiety disorders, alcohol and other substance misuse, and less frequently obsessive compulsive disorder, psychotic reactions and conversion symptoms. Some individuals display symptoms consistent with Acute Stress Disorder (ASD) in the early phase after a traumatic event. Post-traumatic stress disorder (PTSD) is one of the most common enduring mental health problems to occur and has probably received most attention in the research literature.

PTSD is defined by DSM-IV (APA 1994) as a syndrome which is comprised of three clusters of symptoms: repeated re-experiencing of the trauma; avoidance of reminders and symptoms of numbing; and symptoms of heightened arousal. For a diagnosis of acute PTSD to be made symptoms have to have been present for more than a month, with chronic PTSD being the presence of symptoms for three months or longer. Reported rates of acute PTSD have varied across different trauma populations from 23% in motor vehicle accident victims (Ehlers 1998) to 47% in rape victims

(Rothbaum 1992). Epidemiological research suggests that a third of individuals who develop acute PTSD remain symptomatic for six years or longer (Kessler 1995). The impact on social, interpersonal and occupational functioning for those who develop chronic PTSD can be very significant across the life span (Litz 2004).

Description of the intervention

To date, Cochrane reviews have considered psychological intervention of PTSD (Bisson 2007a) and pharmacological treatment of PTSD (Stein 2006). A large number of RCTs have demonstrated the effectiveness of some psychological interventions in treating chronic PTSD (Foa 2008). Trauma focused cognitive behavioural therapy (see Bisson 2007a, Bradley 2005) and eye movement desensitisation and reprocessing (EMDR) (NCCMH 2005) have the strongest evidence base. Evidence based interventions are not effective for all and many individuals remain symptomatic, even after treatment is completed (Bradley 2005).

Over the past 25 years or so, clinicians have been increasingly involved in attempts to develop interventions that might mitigate against the effects of trauma and prevent the onset of chronic PTSD. For a number of years single session interventions such as psychological debriefing were a widely used and popular form of intervention. Debriefing came under increasing scrutiny in the 1990's and has been the subject of a Cochrane review first published in 1998 and recently updated (Rose 2002). Similar findings have been reported in other reviews as well (van Emmerik 2002) The lack of evidence for the efficacy of single session individual debriefing has therefore led many experts in the field to caution against its use (e.g. NCCMH 2005).

How the intervention might work

Increasingly the field has turned its attention to other models of intervention (Bisson 2003; Brewin 2003; Brewin 2008; Ehlers 2003a; Litz 2002; Litz 2004; Gray 2005). These models have included multiple session interventions aimed at any individual exposed to a traumatic event with the aim of preventing the development of PTSD, interventions aimed at individuals with a known or suspected specific risk factor and interventions aimed at individuals who are clearly symptomatic. For example, psychological first aid (NCTSN/NCP 2006) has been increasingly prescribed as an initial form of intervention. Psychological first aid refers to the provision of basic comfort, information, support and attendance to immediate practical and emotional needs. Brief forms of Cognitive Behavioural Therapy (CBT), offered from around two weeks post incident, have been proposed as interventions to prevent the onset of PTSD and to treat those who develop symptoms in the early stages after a trauma. Interventions aimed at enhancing social support have also been suggested (Litz 2002; Ormerod 2002). A number of recent studies have been conducted to evaluate some of these forms of intervention.

Why it is important to do this review

Some experts in the field (e.g. Bisson 2003; Brewin 2008) advocate interventions that are targeted at those who are most at risk of continuing psychological difficulty. However, in the immediate aftermath of a traumatic event there is often a strong imperative from health care services, the public and politicians to provide psychological intervention to everyone who has been exposed regardless of symptomatology. The issues of who should be offered the intervention, timing of intervention and mode of intervention are at this time still contentious. This review aims to clarify the current evidence base by conducting a review of multiple session early interventions aimed at preventing PTSD in individuals who have been exposed to a traumatic event but have not been identified as suffering from any specific psychological difficulties.

OBJECTIVES

To examine the efficacy of psychological interventions aimed at preventing PTSD in individuals who have been exposed to a traumatic event but have not been identified as suffering from any specific psychological difficulties, in comparison with control conditions (including usual care, waiting list conditions and no treatment) and other psychological interventions.

METHODS

Criteria for considering studies for this review

Types of studies

Any randomised controlled trial was eligible. Sample size, language and publication status were not used to determine whether or not a study should be included.

Types of participants

Any individual exposed to a traumatic event. For the purposes of the review, an event was considered to be traumatic if it was likely to meet criterion A1 of DSM-IV (APA 1994) for PTSD. Therefore, the majority of participants in included studies were considered to have experienced, witnessed, or been confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.

Studies that enlisted participants who met a certain symptom profile (e.g. ASD, acute PTSD, depression) were excluded from the review.

The review considered studies involving adults only.

Types of interventions

This review considered any multiple session early psychological intervention designed to prevent symptoms of traumatic stress, and begun within three months of a traumatic incident. Single session interventions were excluded because they are the subject of a separate Cochrane review (Rose 2002). Early psychological interventions aimed at treating individuals who were identified as symptomatic (e.g. with ASD or acute PTSD) is subject to a separate review (Roberts 2010) conducted at the same time as this review.

For the purpose of the review a psychological intervention included any specified non-pharmaceutical intervention aimed at preventing the onset of PTSD offered by one or more health professional or lay person, with contact between therapist and participant on at least two occasions. We decided a priori that eligible intervention categories would include forms of psychological therapy based on a specified theoretical model. Potential intervention categories were identified from previous PTSD based reviews (Bisson 2007a; NCCMH 2005). These were:

1. Trauma focused cognitive behavioural therapy (TF-CBT) - any psychological intervention that predominantly uses trauma focused cognitive, behavioural or cognitive-behavioural techniques. This category includes exposure therapy.
2. Stress management/relaxation - any psychological intervention that predominantly uses non-trauma focused cognitive, behavioural or cognitive-behavioural techniques.
3. TF-CBT Group Therapy - any approach delivered in a group setting that predominantly uses trauma focused cognitive, behavioural or cognitive-behavioural techniques.
4. Cognitive behavioural therapy (CBT) - any psychological intervention that predominantly uses non-trauma focused cognitive, behavioural or cognitive-behavioural techniques. This category excludes the use of exposure therapy.
5. Eye Movement Desensitisation and Reprocessing (EMDR) - any psychological intervention that predominantly uses EMDR.
6. Non-trauma focused CBT group therapy - any approach delivered in a group that predominantly uses non-trauma focused cognitive, behavioural or cognitive-behavioural techniques.
7. Other psychological intervention - any psychological intervention that predominantly uses non-trauma focused techniques that would not be considered cognitive, behavioural or cognitive-behavioural techniques. This category includes non-directive counselling, psychodynamic therapy and hypnotherapy.

We also decided a priori that eligible interventions would include non-pharmaceutical interventions that were not based or only partially based on a specified theoretical model but that nevertheless aim to reduce symptoms of traumatic stress, to include the following categories:

8. Education or information giving intervention - Any intervention which predominantly provides only education or information about possible future difficulties and/ or offers advice about constructive means of coping.
9. Stepped care - Any a priori specified care plan which offers intervention in a stepped care manner based on the continuing needs of the included participants.
10. Interventions aimed at enhancing positive coping skills and improving overall well being - Any non-pharmaceutical intervention which aims to improve well being such as an occupational therapy intervention, an exercise based intervention or a guided self help intervention.

We decided a priori that the trials considered would include:

1. Psychological intervention vs waiting list or usual care control.
2. Psychological intervention vs other psychological intervention.

From prior knowledge of the literature, it was clear that a number of different forms of intervention had been evaluated on differing participant groups. Several studies were thought to have offered intervention to all individuals exposed. Others were known to have evaluated interventions for those who met inclusion based on predictors of future risk. We decided to undertake comparison of all interventions together initially and to undertake sub-analysis on specific interventions and interventions targeted at individuals meeting specific risk factors as appropriate. Given the pattern of naturalistic improvement for many following exposure to a traumatic event it also seemed appropriate to consider separate analysis between studies that began shortly after a traumatic event and those that began later.

Types of outcome measures

Primary outcomes

1. Rates of PTSD amongst those exposed to trauma as measured by a standard classificatory system

Secondary outcomes

1. Severity of clinician-rated traumatic stress symptoms using a standardised measure such as the Clinician Administered PTSD Scale (Blake 1995). Clinician rated measures are widely used as primary outcomes in evaluative studies in the traumatic stress field and are considered to provide the "gold standard" measure by many (e.g. Foa 1997)
2. Severity of self-reported traumatic stress symptoms using a standardised measure such as the Impact of Event Scale (Horowitz 1979), the Davidson Trauma Scale (Davidson 1997) or the Post-traumatic Diagnostic Scale (Foa 1995)
3. Severity of self-reported depressive symptoms using a standardised measure such as the Beck Depression Inventory (Beck 1961)

4. Severity of self-reported anxiety symptoms using a standardised measure such as the Beck Anxiety Inventory (Beck 1988) or the Spielberger State-Trait Anxiety Inventory (Spielberger 1970)
5. Drop-out from treatment
6. Adverse effects
7. General functioning including quality of life measures such as the SF-36 (Ware 1993)
8. Use of health related resources.

Comparisons involving follow-up data would only be made when outcome data was available for similar time points. These time points were decided a priori as 3-6 months, 7-9 months, 10-12 months, 1-2 years, 2 years and beyond.

Search methods for identification of studies

See: Depression, Anxiety and Neurosis Group methods used in reviews.

Electronic searches

This review used a common search strategy with the Cochrane review of early interventions aimed at treating acute stress symptoms (Roberts 2010).

The Cochrane Depression, Anxiety and Neurosis Group (CCDAN) Trials Registers

The Cochrane Collaboration Depression Anxiety and Neurosis Group (CCDAN) maintain two clinical trials registers at their editorial base in Bristol, UK. A references register and a studies based register. The CCDANCTR-References Register contains over 24,000 reports of trials in depression, anxiety and neurosis. Approximately 70% of these references have been coded and tagged to individual trials. These coded records are held in the CCDANCTR-Studies Register.

References to trials for inclusion in the CCDAN registers are collated from routine (weekly), generic searches of MEDLINE, EMBASE and PsycINFO; quarterly searches of the Cochrane Central Register of Controlled Trials (CENTRAL); annual searches of PSYNDEX, LILACS, AMED and CINAHL and review specific searches of additional databases. Details of trials are also sourced from international trials registers, drug companies, the hand-searching of key journals, conference proceedings and other (non-Cochrane) systematic reviews and meta-analyses. A list of CCDAN's generic search strategies can be found in the 'Specialized Register' section of the Group's module text.

The Cochrane Depression, Anxiety and Neurosis Group Trials Registers was searched using the following search strategies (date of search: August 2008).

CCDANCTR-Studies
Diagnosis = "stress disorder*" or PTSD
and
Intervention = therapy or intervention or counsel* or debriefing
and
Age-group = adult or aged or "not stated" or unclear
and not
Duration of therapy = "1 session"
CCDANCTR-References
Keyword = "Stress Disorder*" or "Stress-Disorder*"
or
Free-text = PTSD
and
Free-text = debrief* or *therap* or intervention* or counsel*

An internet search of known web sites and discussion for a was also made by the authors.

Searching other resources

1. Hand searching

Journal of Traumatic Stress and the *Journal of Consulting and Clinical Psychology*

Some volumes of these journals have already been searched by members of the Cochrane Collaboration.

2. Reference lists

Reference lists of the National Institute for Clinical Excellence PTSD Guidelines (NCCMH 2005) and studies identified in the search and of related review articles were searched.

3. Personal communication

The authors contacted key individuals in the field. These included: David Alexander, Chris Brewin, Richard Bryant, Carl Castro, David Clark, Mark Creamer, Enrique Echeburua, Anke Ehlers, Charles Engel, Edna Foa, Matthew Friedman, Berthold Gersons, Neil Greenberg, Terry Keane, Dean Kilpatrick, Brett Litz, Andreas Maercker, Sandy McFarlane, Meaghan O'Donnell, Miranda Olff, Lars-Göran Öst, Roger Pitman, Sue Rose, Barbara Rothbaum, Joe Ruzek, Paula Schnurr, Arieh Shalev, Marit Sijbrandij, Ueli Schnyder, Zahava Solomon, Arnold van Emmerik, Patricia Watson, Simon Wessely, Doug Zatzick, and Lori Zoellner.

Data collection and analysis

Selection of studies

Abstracts of all potential trials were independently read by two authors. If an abstract appeared to represent a RCT, the full report was read by each author independently to determine if the trial met the inclusion criteria. When agreement could not be reached about inclusion a third author was consulted. The studies excluded on further reading are listed in the appendices and reasons given for their exclusion.

Data extraction and management

A data extraction sheet was designed to capture data that would then be entered into Review Manager (RevMan 2003) software.

Information extracted included demographic details of participants, details of the traumatic event, the randomisation process, the interventions used, drop-out rates and outcome data. Data was independently extracted by two authors. When agreement could not be reached the issue was discussed with a third author.

Assessment of risk of bias in included studies

This was assessed in two ways. Firstly, two authors rated studies according to the standard approach described in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins 2005), which considers sequence generation, allocation concealment, blinding of assessors and reporting of loss to follow-up. Each study was then assessed on additional methodological and reporting items identified as especially relevant by the authors. Many recent Cochrane reviews had used a 23 item scale developed by Moncrieff 2001 to assess study quality. However, the Moncrieff 2001scale includes a number of items (e.g., blinding of participants) that are of limited relevance to a psychological intervention. A checklist with an additional 19 criteria was therefore developed for this review to focus on key methodological issues pertinent to psychological interventions research in the traumatic stress field. In developing this checklist consideration was initially given to recommendations (Foa 1997) for seven "gold standards" required in RCTs investigating interventions for PTSD. These standards relate to clearly defined target symptoms, use of reliable and valid outcome measures, use of blind and independent assessors, assessor reliability, manualised specific and replicable treatment, concealment of allocation and treatment adherence. Further criteria related to non-confounded conditions, use of multi-modal outcome measures, reported level of therapist training and use of a control or comparison group were drawn from Hertlein 2004. One criterion based on a clear definition of the population to receive intervention was based on recommendations made by Kenardy 1996, as used by Rose 2002. A further nine criteria addressing adequate follow-up, report of side effects, report of exclusions and refusals, comparability, intent to treat analysis, presentation of results, power calculation, appropriate statistical analysis and justified conclusions were drawn from the Moncrieff 2001 scale.

Cases of disagreement were initially discussed between the two rating authors. In cases where disagreement persisted advice was sought from a third author in order to make a final decision. In developing this scale it was not the study group's intention to report an overall quality assessment score, but rather to allow for reporting on and discussion of specific study quality and reporting issues.

Measures of treatment effect

Continuous outcomes were analysed using weighted mean difference (WMD) when all trials had measured outcome on the same scale. When some trials measured outcomes on different scales the standardised mean difference (SMD) was used. Relative risk (RR) was used as the main categorical outcome measure as this is more widely used than odds ratio (OR) in health related practice. All outcomes were presented using 95% confidence intervals.

Unit of analysis issues

For trials which had a crossover design only results from the first randomisation period were considered. If the trial was a three (or more) armed trial, consideration was given to undertaking pairwise meta-analysis with each arm, depending upon the nature of the intervention in each arm and the relevance to the review objectives. Management of cluster randomised trials followed guidance provided in the Cochrane Handbook.

Dealing with missing data

When intention to treat (ITT) data were available, these were reported in the results. Attempts were made to access ITT data wherever possible. In cases where partial ITT data and partial completer data were available, separate ITT and completer analysis was undertaken. Completer only analysis was performed when this was the only data source available. In cases where there was inadequate information within a particular paper to undertake analysis, attempts were made to compute missing data from other information available within the paper, using guidance provided in the Cochrane Handbook. For example, in a number of cases dichotomous ITT outcomes (PTSD diagnosis) were calculated by adding the number of treatment drop-outs to the number of completers continuing to have the diagnosis. For continuous data when only the SE or t-statistics or p values were reported, SDs were calculated using guidance provided in the Cochrane Handbook. When imputation was not possible or when further clarification was required, we attempted to contact the authors concerned with a request for additional information. In cases where no further useable data were available, the study was not included in further analysis.

Assessment of heterogeneity

A visual inspection of the forest plots was initially used to explore for possible heterogeneity. Heterogeneity between studies was also measured by observing the I-squared test and the chi-squared test ($p < 0$ .10). 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 30% to 50% was considered to indicate moderate heterogeneity. An I-squared of more than 50% was considered to indicate notable heterogeneity. In these cases a random-effects model was used to summarise results. In cases where significant heterogeneity was found to be present we attempted to explain the variation.

Assessment of reporting biases

It was decided a priori that if sufficient studies were available, funnel plots would be prepared and examined for signs of asymmetry. Where asymmetry was identified, other possible reasons for this would be considered.

Data synthesis

Data was pooled from more than one study using a fixed-effect model, except where heterogeneity was considered to be present. In these cases a random-effects model was used as described below.

Subgroup analysis and investigation of heterogeneity

It was decided a priori that the following possible causes of clinical heterogeneity would be explored if sufficient data allowed:
1. Number of treatment sessions taken (two to six versus seven or more)
2. Time after index event exposure to when the intervention begins (one month (four weeks) or less versus one to three months (5 to 13 weeks))
3. Type of traumatic event (combat related trauma versus rape and sexual assault versus other civilian trauma)
4. Participant characteristics (males versus females)
5. Symptom severity as measured by clinical measures at time 1 (mild/moderate versus severe)

Sensitivity analysis

It was decided a priori that sensitivity analysis would explore possible causes of methodological heterogeneity if sufficient data allowed. Analysis would be based on the following criteria:
1. Trials considered most susceptible to bias would be excluded based on the following quality assessment criteria:
a) those with unclear allocation concealment
b) high levels of post-randomisation losses (more than 40%) or exclusions
c) unblinded outcome assessment or blinding of outcome assessment uncertain.
2. Use of intention-to-treat analysis versus completer outcomes would be undertaken depending on available data.

RESULTS

Description of studies

Results of the search

Two hundred and fifty one titles and abstracts were identified as a result of the search process and 50 papers were reviewed in detail by two of the authors independently to establish if they met the specified inclusion criteria.

Included studies

Eleven studies were found to have evaluated brief (2 or more sessions) psychological interventions aimed at preventing PTSD in individuals exposed to a specific traumatic event. Nine studies were reported in English and one (Andre 1997) in French. These studies are described in the included studies table.

Study design

All studies included were two armed randomised controlled trials. Participants would not have been blind to their allocation group. Sample size in the included studies varied from 17 (Gidron 2001) to 162 (Ryding 2004) participants.

Participants

Two studies (Kazak 2005; Zatzick 2001) were conducted in the USA, two in Israel (Gidron 2001; Gidron 2007) two in Australia (Gamble 2005; Holmes 2007), two in Sweden (Ryding 1998; Ryding 2004), one in Canada (Marchand 2006), one in France (Andre 1997) and one in the Netherlands (Brom 1993).
Three studies evaluated interventions offered to mothers who had experienced traumatic births (Gamble 2005; Ryding 1998; Ryding 2004). Two studies involved individuals who had been involved in road traffic accidents (Gidron 2001; Gidron 2007). Both studies included only individuals with a pulse rate of at least 95 beats per minute upon admission into the emergency room. Marchand 2006 included individuals exposed to armed robbery, involving acts of violence. Participants in this study had to have reported experiencing intense fear, helplessness or horror during or after the robbery for inclusion. Andre 1997 included bus drivers who had been assaulted. Participants in Brom 1993 and Zatzick 2001 had been exposed to a range of civilian traumatic experiences. Participants in the Zatzick 2001 study were hospital inpatients at the time of recruitment. Participants in Holmes 2007 had experienced major physical trauma and had been admitted to a trauma centre. In one study (Kazak 2005) participants were caregivers of children newly diagnosed with cancer.

Interventions

One study (Kazak 2005) evaluated an integrated cognitive behavioural and family therapy intervention for caregivers. Four studies (Brom 1993; Gamble 2005;Holmes 2007; Ryding 1998) evaluated individual counselling interventions. In Holmes 2007 the approach used was specified as an interpersonal counselling model. In One study (Ryding 2004) evaluated a group counselling

intervention. One study (Marchand 2006) evaluated an adapted debriefing intervention. One study (Andre 1997) evaluated a CBT intervention of up to six sessions. One study (Zatzick 2001) evaluated a counselling and collaborative care intervention to hospitalised inpatients. The maximum number of sessions available to patients in this study was not reported. The mean number of sessions attended by those completing therapy was 5.9. Two studies (Gidron 2001; Gidron 2007) evaluated a two session memory structuring intervention. These two studies used a supportive listening intervention for comparison. In all other studies active interventions were compared against a waiting list or treatment as usual control condition.

Outcomes

Most of the studies included used well validated self report measures of PTSD, depression or anxiety as key outcomes. Measures used are listed in the Characteristics of included studies table. PTSD measures commonly used included the Impact of Event Scale (Horowitz 1979) and the Post-traumatic Diagnostic Scale (Foa 1995). Three studies Gamble 2005; Holmes 2007and Marchand 2006 used a clinician administered measure.

Excluded studies

Studies were excluded if they did not satisfy the inclusion criteria. Single session interventions included in the Cochrane review: Psychological debriefing for preventing post traumatic stress disorder (Rose 2002) were excluded from this review. One study (Bordow 1979) reported in that review did include more complex psychological intervention. We decided to exclude this study from the current review as the study design was only partially randomised. Other studies evaluating single session interventions were also excluded (Resnick 2005; Rose 1999; Rothbaum submitted; Turpin 2005). Other studies that were reviewed and excluded are described in the excluded trials table.

Studies awaiting classification / Ongoing studies

Authors attempted to contact investigators from all seven studies listed in either the Studies awaiting classification or Characteristics of ongoing studies tables. To date, we have not received sufficient information to exclude or include any study formally. It is anticipated that we will rerun electronic searches within 12 months of publication of the current version of this review, and that we will attempt to renew contacts with these investigators at that time.

Risk of bias in included studies

Methodological quality of many of the studies included was poor. The process of recruitment used by Brom 1993 was judged to be of particular concern as recruitment took place prior to invitation to potential participants to join the study. This may lead to significant difference in response rate, drop-out rate, other drop-out factors and baseline scores between the treatment and control group.

Sequence generation

Many studies did not provide full details of the method of allocation and some bias was believed to be possible from the descriptions in seven studies. In four studies the method of allocation was judged to be adequately described, with no bias possible (Gamble 2005; Holmes 2007; Kazak 2005 and Zatzick 2001).

Allocation concealment

Many studies did not provide full details of the method of randomisation and therefore concealment was unclear or inadequate in eight studies. There was reporting of adequate concealment procedures in three studies (Holmes 2007; Kazak 2005 and Zatzick 2001).

Blinding

A double blind methodology for studies of psychological treatment is impossible as it is clear to participants what treatment they are receiving. However, a well designed study should have ensured blinding of the assessor of outcome measures. This was clearly performed in six studies (Gamble 2005; Gidron 2001; Gidron 2007; Holmes 2007; Marchand 2006 and Zatzick 2001).

Loss to follow-up

This was fully reported with reasons by group in four studies (Gamble 2005; Holmes 2007; Marchand 2006 and Zatzick 2001). Gamble 2005 included follow-up data from all participants (one participant in the intervention group could not be contacted at initial follow-up. Marchand 2006 and Zatzick 2001 included withdrawals in analysis by estimation of outcome by the method of "last observation carried forward". Holmes 2007 had a high drop-out rate from their intervention group but obtained 6 month follow-up most of the participants who were randomised. However, outcome data was only reported for those who completed intervention. Other studies provided data only for treatment completers and withdrawals were recorded without reasons by group or the number of withdrawals was not specified.

Additional methodological and reporting issues

The overall quality of the studies in relation to other methodological and reporting issues was variable. All of the studies included in the review were considered to have defined clear targets for inclusion and to have used at least one reliable and valid outcome measure to assess key outcome variables. For a summary of the reviewers judgements on other criteria see Table 1 and Table 2 . Of note,

only one study (Holmes 2007) gave information about whether or not participants experienced adverse effects which might have been attributable to their intervention. They reported the results of post-hoc analysis which suggested that individuals in the counselling intervention with a past psychiatric history tended to do worse at 6 month follow-up. Use of withdrawals in analysis is dealt with in "Loss to follow-up" above.

Effects of interventions

Results are reported for all available outcome measures specified in the methodology. None of the studies identified reported data on adverse effects or use of health related resources.

As reported above ("Dealing with missing data") when intention to treat (ITT) data was available this is reported in the results, for both dichotomous and continuous data, although most studies reported completer only data. Completer only analysis is presented when these were the only data source available. Zatzick 2001 describe the use of ITT analysis in their paper, but did not report outcome data. Completer data were obtained from this study group and are the data used in our analysis. Two studies (Andre 1997; Gidron 2007) provided no useable data for further analysis, as neither study reported standard deviations alongside outcome means or dichotomous data that could be included in meta-analysis, and it was not possible to obtain additional data from the study authors. For notation purposes "n" refers to the number of participants included in each piece of analysis, "k" refers to the number of studies contributing to the analysis. Forest plots were not generated for data from single studies only. These data are reported in Table 3.

Comparison 1: Any intervention vs waiting list/ usual care

Apart from Andre 1997 eight studies compared a psychological intervention against a waiting list or treatment as usual condition (Brom 1993; Gamble 2005; Holmes 2007; Kazak 2005; Marchand 2006; Ryding 1998; Ryding 2004 and Zatzick 2001).

Primary outcome

1. PTSD diagnosis

Six studies provided data on diagnosis of PTSD (Gamble 2005; Holmes 2007; Marchand 2006; Ryding 1998; Ryding 2004 and Zatzick 2001). Post treatment there was no significant difference between treatment and control conditions for ITT analysis (fixed effect) (k=5, n=479; RR 0.84; 95% CI 0.60 to 1.17) (see Analysis 1.1) or for completer (fixed effects) (k=5, n=435; RR 0.84; 95% CI 0.57 to 1.26) (see Analysis 1.2). A low level of statistical heterogeneity was indicated in the ITT analysis and a moderate level for the completer analysis (I^2=29.3% and 36.4% respectively).
There was also no difference between treatment and control conditions at 3-6 month follow-up for ITT analysis (fixed effect) (k=4, n=312; RR 0.67; 95% CI 0.34 to 1.33) (see Analysis 1.3) and for those available to follow-up (fixed effect) (k=4, n=285; RR 0.59; 95% CI 0.27 to 1.25) (see Analysis 1.4). A low level of statistical heterogeneity was indicated in both analyses (I^2=18% and 14% respectively).
No individual study showed any significant difference in favour of the treatment intervention or the control. A subgroup analysis of treatment versus control for individual counselling was also not significant post treatment (fixed effect) (k=2, n=208; RR 1.15; 95% CI 0.68 to 1.92)(I^2=0%) (see Analysis 1.1) or at 3-6 month follow-up (k=3, n=260; RR 0.61; 95% CI 0.28 to 1.32)(I^2=0%) (see Analysis 1.4).

Secondary outcomes

1. Severity of PTSD (clinician report)

One study (Gamble 2005) used clinician rated measures of severity of PTSD symptoms. Post treatment there was no significant difference between treatment and control conditions (fixed effects) (n=102; WMD -0.64; 95% CI -1.94 to 0.66). However, a significant difference was indicated at 3 month follow-up (fixed effects) (n=103; WMD -1.29; 95% CI -2.47 to -0.11).

2. Severity of PTSD (self-report)

Six studies provided self report completer data of severity of PTSD symptoms (Brom 1993; Holmes 2007; Kazak 2005; Marchand 2006; Ryding 2004 and Zatzick 2001). There was no significant difference between the two conditions post treatment (fixed effects) (k=6, n=471; SMD 0.07; 95% CI -0.12 to 0.25) (see Analysis 1.5). There was some statistical heterogeneity (I^2=44.2%). No individual study showed any significant difference in favour of the treatment intervention or the control. At 3-6 month follow-up a difference which just reached significance was found in favour of the control group (fixed effects)(k=4, n=292; SMD 0.23; 95% CI 0.00 to 0.46)(I^2=0%) (see Analysis 1.6) .

3. Anxiety

Two studies reported anxiety related outcome data (Holmes 2007 and Kazak 2005). There was no significant difference between the treatment and intervention groups post treatment (random effects) (k=2, n=87; SMD -0.26; 95% CI -1.13 to 0.60) (see Analysis 1.7). A notable level of statistical heterogeneity was indicated (I^2= 71.3%). Neither study showed any significant difference in favour of either condition.

4. Depression

Three studies reported depression related outcome data (Holmes 2007; Ryding 2004 and Zatzick 2001). There was no significant difference between the two conditions either post treatment (fixed effects) (k=3, n=234; SMD -0.09; 95% CI -0.35 to 0.17) (see Analysis 1.8) or 3-6 month follow-up (random effects) (k=2, n=84; SMD 0.37; 95% CI -0.47 to 1.21) (see Analysis 1.9). A moderate level of statistical heterogeneity was indicated in analysis post treatment (I^2=37.9%). A notable level of statistical heterogeneity was indicated in the 3-6 month follow-up analysis (I^2=67.7%). There was a significant difference in favour of the control condition in Zatzick 2001.

5. Leaving the study early

All eight studies provided data on early drop-out. There was no significant difference between the treatment and control conditions (fixed effects) (k=8, n=758; RR 1.17; 95% CI 0.83 to 1.65) (see Analysis 1.10). A moderate level of statistical heterogeneity was indicated (I^2=45.6%).

No studies provided data on adverse effects, general functioning or use of health related resources.

Comparison 2. Any intervention vs other psychological intervention

Two studies (Gidron 2001 and Gidron 2007) compared a psychological intervention against another active intervention. In both cases memory structuring intervention was compared with supportive listening with a total of 51 participants. Gidron 2007 provided insufficient data to be included in meta-analysis.

1 PTSD Diagnosis

Data was available for 17 participants at three months post trauma. No significant difference was observed between treatment and the control condition at 3 month follow-up (n=17; RR 0.28, 95% CI 0.04 to 2.02).

5 Leaving the study early

No drop-outs were reported in either the treatment or the control condition.

Publication bias

All of the studies identified for this review have been published. There were insufficient numbers of studies in each comparison to allow for meaningful consideration of publication bias.

DISCUSSION

Summary of main results

We identified 11 RCTs of early multiple session psychological interventions starting within three months of a traumatic event that were designed to prevent traumatic stress symptoms. These studies included a total of 941 participants. Nine studies with 775 provided data available for analyses. There was no evidence that a multiple session intervention aimed at everyone following a traumatic event was effective. There was a trend that just failed to reach statistical significance for no intervention to result in less self-reported PTSD symptoms at 3-6 month follow-up than a multiple session intervention. The heterogeneous nature of the interventions included means that there remains uncertainty regarding the efficacy of specific interventions.

Overall completeness and applicability of evidence

The studies included in this review directly address the primary review question. It was possible to perform meta-analyses of randomised controlled trials of multiple session psychological interventions aimed at preventing PTSD in individuals who have been exposed to a traumatic event but have not been identified as suffering from any specific psychological difficulties. However, meta-analyses could not be performed for all outcomes and the limited number of studies, their small sample sizes and heterogeneity (see below) complicate interpretation. The question of how interventions fare against another psychological intervention could only be answered for memory structuring and not for other interventions. Given the prominence of cognitive behavioural interventions in the evidence base for psychological therapies it is surprising that only one of the studies (Andre 1997) identified in this review evaluated a CBT intervention, although Kazak 2005 and Marchand 2006 included CBT components in their interventions. Andre 1997 reported a significant decrease in intrusive symptoms and anxiety in their treatment group. Unfortunately, data provided in their paper did not permit inclusion in meta-analysis. Counselling was the intervention most frequently evaluated. The evidence reviewed did not provide any support for its effectiveness as a preventative intervention.

There is a need for some caution in the applicability of the trend for no intervention to result in less self-reported PTSD symptoms at 3-6 month follow-up than multiple session intervention (Analysis 1.6), as findings for PTSD diagnosis (Analysis 1.3 and Analysis 1.4) in the same periods were in the opposite direction. Four studies contributed to each analysis, with Marchand 2006 and Zatzick 2001 being common to both. The reason for this apparent contradictory finding is not clear. However, there was significant clinical heterogeneity in the studies involved in these com-

parisons. Intervention participants in Marchand 2006 appeared to fare worst in self-reported PTSD symptoms, compared to those in the control condition. This study used an adapted debriefing intervention. Debriefing interventions have previously been associated with worse outcome at longer term follow-up (Rose 2002). Data from Brom 1993 contributed most in terms of weight to PTSD symptom analysis and it should be noted that there are particular methodological concerns with this study, in terms of recruitment and allocation. Contradictory findings from Zatzick 2001 are difficult to explain.

Participants in the studies included in the review were exposed to single individual traumatic events and there were no studies of larger scale traumatic events such as disasters or wars which limits the external validity of the results across the full range of traumatic events.

Unfortunately, only one study reported adverse effects (Holmes 2007) and it is unclear whether or not any adverse effects occurred in the other studies. The absence of tolerability assessment is a key shortcoming in the RCTs identified and one that has previously been noted in psychological treatment studies of chronic PTSD (Bisson 2007b).

Quality of the evidence

Six RCTs with 479 participants were included in the primary meta-analysis of ITT rates of PTSD. Other analyses included fewer RCTs and participants and therefore the results are likely to be less robust, with an increased risk of chance findings. The inclusion of five studies (479 participants) for the primary outcome, together with the lack of difference between the ITT and completers' only findings suggests this result may be robust. However, this must be considered in the light of heterogeneity and methodological quality issues.

Heterogeneity

There was evidence of both clinical and statistical heterogeneity in the included studies. Although all the trials attempted to prevent PTSD symptoms, the nature of the interventions included in the meta-analyses was quite diverse. The interventions included in the primary analysis were two sessions of counselling (one face to face and one by telephone (Gamble 2005), two sessions of adapted critical incident stress debriefing (Marchand 2006), four 45-60 minute counselling sessions (Ryding 1998), two group counselling and education sessions (Ryding 2004) and a collaborative care intervention (Zatzick 2001). It is very difficult to compare such trials and there did appear to be some differences in outcome, for example Ryding 2004 appearing to be more effective than Marchand 2006. There were also differences in the clinical populations which included motor vehicle accident victims, women who had emergency Caesarean sections and caregivers and parents following the news that their child had cancer. Unfortunately the limited number of trials meant that sensitivity analyses could not be performed in a meaningful way to explore these issues further. Statistical heterogeneity was apparent in several analyses, the I^2 value demonstrating inconsistencies in the outcomes of some trials that were grouped together. When statistical heterogeneity was identified we used a random effects model as opposed to a fixed effect model to calculate more conservative confidence intervals. We concluded that all trials were essentially trying to measure the same thing and that it was worthwhile summarising their combined results, but the variation means that caution should be applied when interpreting the results (Fletcher 2007).

Methodological Quality

The overall quality of the studies was varied and is described above. There were several issues that were problematic in several studies including the randomisation process, incomplete reporting of dropouts and absence of a manualised, replicable specific treatment in all but the Kazak 2005 study. As with all psychological treatment trials there are issues with the control groups. This is particularly important in early intervention research where a reduction in symptoms over the duration of the trial would be expected, given the natural course of traumatic stress reactions. The development of a psychological treatment placebo is very difficult, if not impossible, as is blinding of participants and therapists. Some of the wait list/usual care groups may have received some form of intervention by virtue of contact through symptom monitoring, but this was not properly evaluated and it is not possible to determine what, if any, impact on outcomes this would have had. The two studies that did have an active control group (Gidron 2001; Gidron 2007) did not show a difference between that and two sessions of memory structuring.

The small sample sizes of most of the studies are also an important limitation. However, the intervention and control groups in most studies appeared well matched at baseline, reducing the risk of the reported unadjusted mean outcomes being influenced by baseline differences.

Potential biases in the review process

This review adhered strictly to the Cochrane Collaboration guidelines. This will have reduced potential bias but there is likely to have been a bias towards published as opposed to unpublished studies and English language rather than other language manuscripts. Full data were not available for all studies although this potential bias was reduced by personal contact with authors of papers who supplied information that could not be extracted from the published manuscripts. The clear inclusion and exclusion criteria helped with correct identification as did the fact that study selection was performed independently by two of the reviewers, with a third becoming involved if there were any disagreements.

Agreements and disagreements with other studies or reviews

This is the first specific systematic review of multiple session interventions to prevent PTSD. The results are consistent with the findings of systematic reviews that have included studies in this area (NCCMH 2005) and also with prevailing guidance regarding how best to respond following a traumatic event (NCCMH 2005, ACPMH 2007). It is noteworthy that there was a trend for increased self-report of PTSD symptoms at 3-6 month follow-up (Analysis 1.6) and that another study (Holmes 2007) reported that individuals in the counselling intervention with a past psychiatric history tended to do worse at 6 month follow-up. At first glance this appears to be consistent with the finding that single session interventions are associated with worse outcome at longer term follow-up (Rose 2002), not least given the apparent contribution of the adapted critical incident stress debriefing intervention (Marchand 2006) to the trend in this review. However, there is a need for some caution in interpreting this trend given the contradictory findings for PTSD diagnosis.

AUTHORS' CONCLUSIONS

Implications for practice

These results coupled with those of the Cochrane review of single session interventions (Rose 2002) suggest that at this time there is little evidence to support the use of psychological intervention for routine use following traumatic events and that some multiple session interventions, like single session interventions, may have an adverse effect on some individuals. The clear practice implication of this is that, at present, multiple session interventions aimed at all individuals exposed to traumatic events should not be used.

Implications for research

Further well-designed randomised controlled trials of interventions that appeared to show more promise than others, e.g. Ryding 2004, could be subjected to further evaluation and it is noted that preventative cognitive behavioural interventions have not been adequately investigated. However, the absence of effect and trend towards a worse outcome with intervention than without suggests that great caution should be adopted in the planning of future research. The results suggest that alternative approaches are required; this could involve developing interventions that address our increasing knowledge regarding the aetiology and development of PTSD from social, psychological and neurobiological perspectives. Indeed, a Cochrane review of prevention of PTSD with pharmacological agents has now been registered (Ipser 2006). It would be of interest to examine interventions aimed at couples and families to improve familial response, not least given the better results of Ryding 2004. It would also be of interest to evaluate forms of community intervention and interventions aimed at improving coping skills and enhancing positive and helpful behaviours (Ruzek 2007). Future research should also explore the optimal time to intervene, consider adverse events and tolerability of treatment, and carefully control for additional intervention.

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* *Indicates the major publication for the study*

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Andre 1997

Methods	RCT - bias possible	
Participants	132 outpatient victims of assault. Intervention offered to all	
Interventions	Up to 6 sessions of CBT vs. usual care	
Outcomes	HADS, IES	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	High risk	C - Inadequate

Brom 1993

Methods	RCT - bias possible	
Participants	Outpatient victims of MVA, 738 individuals randomised, 151 agreed to take part in the study	
Interventions	Up to six sessions of individual preventative counselling vs. monitorin group	
Outcomes	IES, TSI	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	High risk	C - Inadequate

Gamble 2005

Methods	RCT - bias possible
Participants	103 mothers with traumatic birth. Intervention offered to all
Interventions	1 session of face to face counselling and 1 session of telephone counselling lasting up to 60 mins vs treatment as usual

Gamble 2005 (*Continued*)

Outcomes	MINI-PTSD, EPDS, DASS-21	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	High risk	C - Inadequate

Gidron 2001

Methods	RCT - bias possible	
Participants	17 outpatient victims of an MVA, admitted to the emergency room with a heart rate greater than 95 beats per minute	
Interventions	Two sessions of Memory structuring intervention vs. supportive listening	
Outcomes	PDS	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	High risk	C - Inadequate

Gidron 2007

Methods	RCT - bias possible	
Participants	34 outpatient victims of an MVA, admitted to the emergency room with a heart rate greater than 95 beats per minute	
Interventions	Two sessions of Memory structuring intervention vs. supportive listening	
Outcomes	PDS	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**

Gidron 2007 (*Continued*)

Allocation concealment?	High risk	C - Inadequate

Holmes 2007

Methods	RCT - bias unlikely	
Participants	90 victims of major physical trauma	
Interventions	Interpersonal counselling (mean of 5.9 sessions for completers) vs. treatment as usual	
Outcomes	SCID, PCL, BDI HADS, AUDIT	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	Low risk	A - Adequate

Kazak 2005

Methods	RCT - bias possible	
Participants	38 caregivers and parents of children newly diagnosed with cancer. Intervention offered to all	
Interventions	Three 45min sessions of adapted CBT and family therapy intervention vs treatment as usual	
Outcomes	IES-R, STAI	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	Low risk	A - Adequate

Marchand 2006

Methods	RCT - bias possible
Participants	75 outpatient victims of armed robbery meeting criterion A1 and A2 of DSM-IV diagnosis for PTSD
Interventions	Two 1 hour sessions of adapted critical incident stress debriefing vs a no intervention control group

Marchand 2006 (*Continued*)

Outcomes	SCID, IES	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	High risk	C - Inadequate

Ryding 1998

Methods	RCT - bias possible	
Participants	106 - emergency caesarean	
Interventions	Four 45-60 minute counselling sessions vs treatment as usual	
Outcomes	IES, SCL, Wijma- Expectancy/ Experience Questionnaire	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	High risk	C - Inadequate

Ryding 2004

Methods	RCT - bias possible	
Participants	162 women who had experienced birth by emergency caesarean. Intervention offered to all	
Interventions	Two group sessions of counselling and education vs treatment as usual	
Outcomes	IES, Wijma- Expectancy/ Experience Questionnaire	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	High risk	C - Inadequate

Zatzick 2001

Methods	RCT - bias unlikely	
Participants	34 physically injured hospitalized MVA & assault victims	
Interventions	Collaborative care intervention, including assignment to trauma support specialist vs usual care	
Outcomes	PCL, CES-D, ASI, PCS	
Notes		
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	Low risk	A - Adequate

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Backman 1997	Not a true RCT and not a clear early intervention
Bisson 2004	Treatment study of symptomatic individuals
Bordow 1979	Not a true RCT and does not include outcome measures aimed at assessing symptoms of PTSD
Bryant 1998	Treatment study of symptomatic individuals
Bryant 1999	Treatment study of symptomatic individuals
Bryant 2003	Treatment study of symptomatic individuals
Bryant 2005	Treatment study of symptomatic individuals
Bryant 2008	Treatment study of symptomatic individuals
Bugg 2009	Treatment study of symptomatic individuals
Collie in press	Not an RCT and does not appear to be an early intervention
Devilly 1999	Not an early intervention study
Echeburua 1996	Treatment study of symptomatic individuals
Ehlers 2003b	Treatment study of symptomatic individuals

(*Continued*)

Falsetti 2001	Not an early intervention study
Fecteau 1999	Not an early intervention study
Foa 2004	Not an early intervention study
Foa 2006	Treatment study of symptomatic individuals
Lange 2001	Not an early intervention study
Lee 2002	Not an early intervention study
Levine 2005	Not an early intervention study
Marcus 1997	Not an early intervention study
Power 2002	Not an early intervention study
Resnick 2005	Single session intervention
Rose 1999	Single session intervention
Rosser 1991	Not an RCT
Rothbaum 1997	Not an early intervention study
Rothbaum submitted	Single session intervention
Scheck 1998	Not an early intervention study
Schoutrop 2002	Not an early intervention study and it was not clear that participants had experienced a traumatic event consistent with the A1 criteria for diagnosis of PTSD using DSM-IV
Sijbrandij 2007	Treatment study of symptomatic individuals
Sloan 2004	Not an early intervention study
Steffgen 2002	Not an RCT
Taylor 2003	Not an early intervention study
Turpin 2005	Single session intervention
van Emmerik 2008	Treatment study of symptomatic individuals
Wagner 2007	Treatment study of symptomatic individuals

(*Continued*)

Wilson 1995	Not an early intervention study
Zatzick 2004	Treatment study of symptomatic individuals
Öst unpublished	Treatment study of symptomatic individuals

Characteristics of studies awaiting assessment *[ordered by study ID]*

Kilpatrick 1984

Methods	Not stated
Participants	Victims of rape
Interventions	Repeated Assessment vs Delayed Assessment vsTherapy - Brief Behavioral Intervention
Outcomes	Not stated
Notes	So far, it has not been possible to access this publication

Characteristics of ongoing studies *[ordered by study ID]*

Bousquet Des Groseilliers

Trial name or title	An intervention based on social support can prevent PTSD symptoms: A randomized-controlled trial
Methods	RCT
Participants	64 - unspecified
Interventions	Social Skills Training vs Waiting Lists
Outcomes	IES-R
Starting date	Not stated
Contact information	
Notes	Presented at: 22nd Annual Meeting, International Society for Traumatic Stress Studies, November 4 - 7 2006, Hollywood, CA , 189-90. 2006

Frommberger 2002

Trial name or title	Manualized early cognitive-behavioral intervention program in accident victims. A prospective study
Methods	RCT
Participants	Not stated
Interventions	Not stated
Outcomes	Not stated
Starting date	Not stated
Contact information	
Notes	Presented at: XII World Congress of Psychiatry, Aug 24-9, 2002, Yokohama, Japan. 2002

Georgiades 2000

Trial name or title	Investigation of the efficacy of CBT and EMDR therapy in post-traumatic stress disorder (PTSD): a comparative study
Methods	RCT
Participants	90 participants expected
Interventions	Cognitive Behavioral Therapy vs Eye Movement Desensitization and Reprocessing vs Waiting Lists
Outcomes	Impact of Event Scale (IES) /State-Trait Anxiety Inventory (STAI) /General Health Questionnaire (GHQ) / Beck Anxiety Inventory (BAI) /Beck Depression Inventory (BDI) /PTSD Symptom Scale (PSS)
Starting date	Not stated
Contact information	
Notes	Identified as being on the National Research Register, 2000

Greenberg, in preparation

Trial name or title	A cluster randomised controlled trial to determine the efficacy of TRiM (Trauma Risk Management) in achieving a positive culture change, reducing organisational distress and improving unit response to traumatic events
Methods	Cluster RCT
Participants	Military personnel
Interventions	Trauma risk Management vs usual care

Greenberg, in preparation (*Continued*)

Outcomes	Not stated
Starting date	Not stated
Contact information	
Notes	

Hoge 2006

Trial name or title	The efficacy of battlemind training in facilitating the transition from combat to home among soldiers
Methods	RCT
Participants	819 Military personnel
Interventions	Stress Education/ Therapy/Battlemind Training/ vs not stated
Outcomes	Depressive Symptoms /PTSD Symptoms
Starting date	Not stated
Contact information	
Notes	Presented: 22nd Annual Meeting, International Society for Traumatic Stress Studies, November 4 - 7 2006, Hollywood, CA , 87. 2006

Koopman 2005

Trial name or title	The effects of a workbook-journal in reducing depression and posttraumatic stress disorder in rural/socially isolated women newly diagnosed with breast cancer
Methods	RCT
Participants	150 newly diagnosed womenwith breast cancer
Interventions	Bibliotherapy vs No Intervention vs Combined Modality
Outcomes	Center for Epidemiological Studies Depression Scale (CES-D) / Post-traumatic Stress Disorder Checklist (PCL)
Starting date	Not stated
Contact information	

Koopman 2005 (*Continued*)

Notes	Presented at: 63rd Annual Meeting of the American Psychosomatic Society, 2005 March 2-5, Vancouver, Canada, A35. 2005

DATA AND ANALYSES

Comparison 1. Any early psychological intervention vs waiting list/ usual care

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 PTSD Diagnosis post treatment for ITT data	5	479	Risk Ratio (M-H, Fixed, 95% CI)	0.84 [0.60, 1.17]
1.1 Individual counselling versus waitlist/ TAU	2	208	Risk Ratio (M-H, Fixed, 95% CI)	1.15 [0.68, 1.92]
1.2 Group counselling versus waitlist/ TAU	1	162	Risk Ratio (M-H, Fixed, 95% CI)	0.61 [0.35, 1.05]
1.3 Adapted debriefing vs waitlist/ TAU	1	75	Risk Ratio (M-H, Fixed, 95% CI)	3.82 [0.42, 35.04]
1.4 Collaborative care vs waitlist/ TAU	1	34	Risk Ratio (M-H, Fixed, 95% CI)	0.5 [0.19, 1.31]
2 PTSD Diagnosis post treatment for completers	5	435	Risk Ratio (M-H, Fixed, 95% CI)	0.84 [0.57, 1.26]
2.1 Individual counselling versus waitlist/ TAU	2	202	Risk Ratio (M-H, Fixed, 95% CI)	1.18 [0.68, 2.04]
2.2 Group counselling versus waitlist/ TAU	1	147	Risk Ratio (M-H, Fixed, 95% CI)	0.53 [0.25, 1.10]
2.3 Adapted debriefing vs waitlist/ TAU	1	57	Risk Ratio (M-H, Fixed, 95% CI)	3.84 [0.42, 34.72]
2.4 Collaborative care vs waitlist/ TAU	1	29	Risk Ratio (M-H, Fixed, 95% CI)	0.36 [0.09, 1.48]
3 PTSD Diagnosis 3-6 month follow-up for ITT data	4	312	Risk Ratio (M-H, Fixed, 95% CI)	0.67 [0.34, 1.33]
3.1 Individual counselling versus waitlist/ TAU	2	205	Risk Ratio (M-H, Fixed, 95% CI)	0.65 [0.28, 1.50]
3.2 Adapted debriefing vs waitlist/ TAU	1	75	Risk Ratio (M-H, Fixed, 95% CI)	2.55 [0.24, 26.87]
3.3 Collaborative care vs waitlist/ TAU	1	32	Risk Ratio (M-H, Fixed, 95% CI)	0.43 [0.10, 1.81]
4 PTSD Diagnosis 3-6 month follow-up for completers	4	285	Risk Ratio (M-H, Fixed, 95% CI)	0.59 [0.27, 1.25]
4.1 Individual counselling versus waitlist/ TAU	2	202	Risk Ratio (M-H, Fixed, 95% CI)	0.52 [0.18, 1.47]
4.2 Adapted debriefing vs waitlist/ TAU	1	57	Risk Ratio (M-H, Fixed, 95% CI)	2.56 [0.25, 26.65]
4.3 Collaborative care vs waitlist/ TAU	1	26	Risk Ratio (M-H, Fixed, 95% CI)	0.39 [0.10, 1.58]
5 Severity of PTSD symptoms post treatment for completers (self report)	6	471	Std. Mean Difference (IV, Fixed, 95% CI)	0.07 [-0.12, 0.25]
5.1 Adapted CBT and family intervention vs waitlist/ TAU	1	29	Std. Mean Difference (IV, Fixed, 95% CI)	-0.35 [-1.11, 0.40]

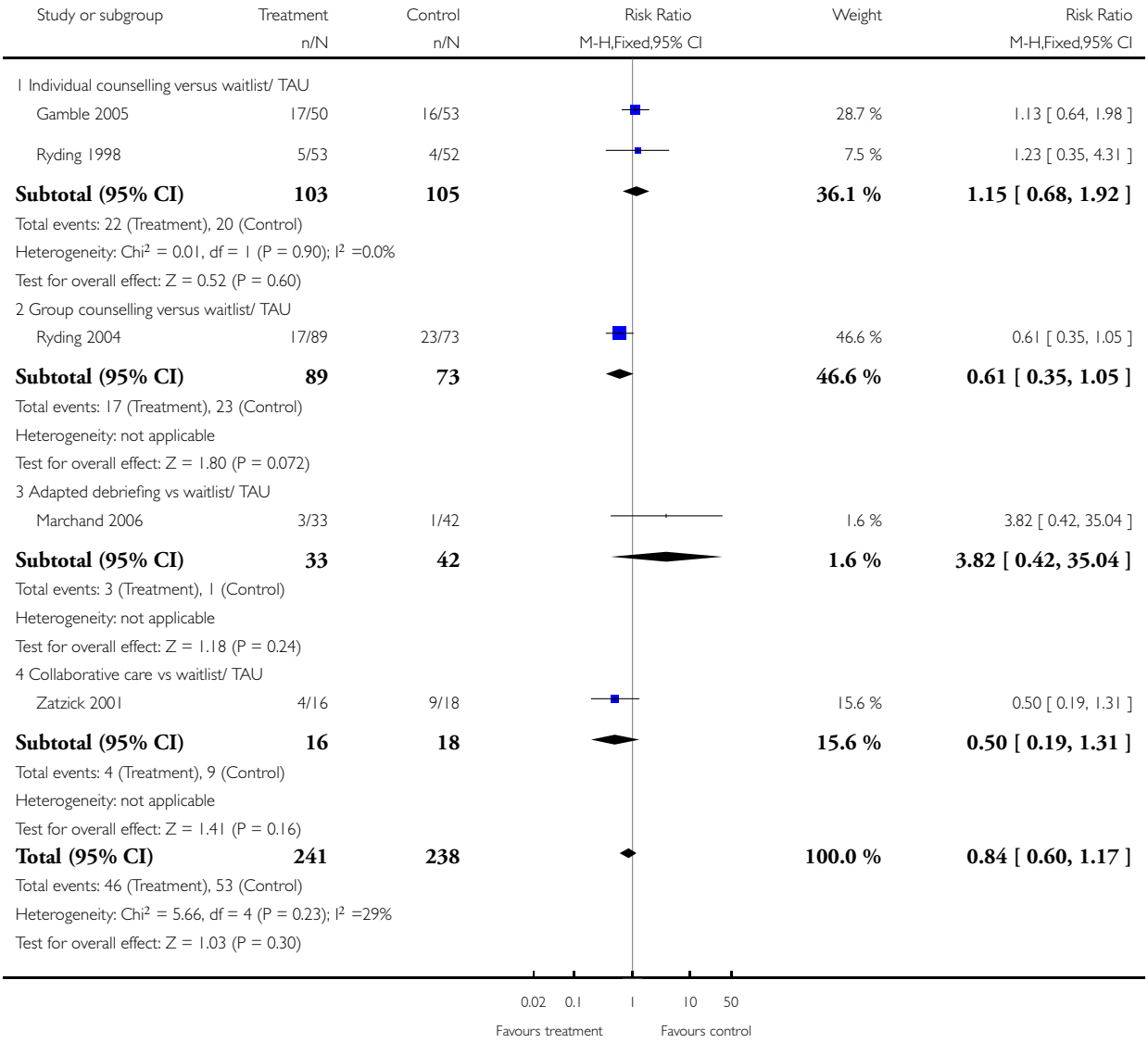
5.2 Individual counselling versus waitlist/ TAU	2	209	Std. Mean Difference (IV, Fixed, 95% CI)	0.19 [-0.08, 0.46]
5.3 Group counselling versus waitlist/ TAU	1	147	Std. Mean Difference (IV, Fixed, 95% CI)	-0.09 [-0.41, 0.24]
5.4 Adapted debriefing vs waitlist/ TAU	1	57	Std. Mean Difference (IV, Fixed, 95% CI)	0.50 [-0.03, 1.03]
5.5 Collaborative care vs waitlist/ TAU	1	29	Std. Mean Difference (IV, Fixed, 95% CI)	-0.50 [-1.24, 0.25]
6 Severity of PTSD symptoms: 3-6 month follow-up (self report)	4	292	Std. Mean Difference (IV, Fixed, 95% CI)	0.23 [-0.00, 0.46]
6.1 Individual counselling versus waitlist/ TAU	2	209	Std. Mean Difference (IV, Fixed, 95% CI)	0.15 [-0.12, 0.42]
6.2 Adapted debriefing vs waitlist/ TAU	1	57	Std. Mean Difference (IV, Fixed, 95% CI)	0.43 [-0.10, 0.96]
6.3 Collaborative care vs waitlist/ TAU	1	26	Std. Mean Difference (IV, Fixed, 95% CI)	0.41 [-0.37, 1.19]
7 Anxiety post treatment	2	87	Std. Mean Difference (IV, Random, 95% CI)	-0.26 [-1.13, 0.60]
7.1 Adapted CBT and family intervention vs waitlist/ TAU	1	58	Std. Mean Difference (IV, Random, 95% CI)	0.13 [-0.38, 0.65]
7.2 Individual counselling versus waitlist/ TAU	1	29	Std. Mean Difference (IV, Random, 95% CI)	-0.76 [-1.54, 0.02]
8 Depression post treatment	3	234	Std. Mean Difference (IV, Fixed, 95% CI)	-0.09 [-0.35, 0.17]
8.1 Individual counselling versus waitlist/ TAU	1	58	Std. Mean Difference (IV, Fixed, 95% CI)	0.32 [-0.20, 0.84]
8.2 Group counselling versus waitlist/ TAU	1	147	Std. Mean Difference (IV, Fixed, 95% CI)	-0.22 [-0.55, 0.10]
8.3 Collaborative care vs waitlist/ TAU	1	29	Std. Mean Difference (IV, Fixed, 95% CI)	-0.26 [-0.99, 0.48]
9 Depression at 3-6month follow-up	2	84	Std. Mean Difference (IV, Random, 95% CI)	0.37 [-0.47, 1.21]
9.1 Individual counselling versus waitlist/ TAU	1	58	Std. Mean Difference (IV, Random, 95% CI)	0.0 [-0.52, 0.52]
9.2 Collaborative care vs waitlist/ TAU	1	26	Std. Mean Difference (IV, Random, 95% CI)	0.86 [0.05, 1.68]
10 Leaving the study early due to any reason	8	758	Risk Ratio (M-H, Fixed, 95% CI)	1.17 [0.83, 1.65]
10.1 Adapted CBT and family intervention vs waitlist/ TAU	1	38	Risk Ratio (M-H, Fixed, 95% CI)	2.78 [0.61, 12.59]
10.2 Individual counselling versus waitlist/ TAU	4	449	Risk Ratio (M-H, Fixed, 95% CI)	1.29 [0.82, 2.03]
10.3 Group counselling versus waitlist/ TAU	1	162	Risk Ratio (M-H, Fixed, 95% CI)	0.72 [0.27, 1.89]
10.4 Adapted debriefing vs waitlist/ TAU	1	75	Risk Ratio (M-H, Fixed, 95% CI)	1.02 [0.45, 2.29]
10.5 Collaborative care vs waitlist/ TAU	1	34	Risk Ratio (M-H, Fixed, 95% CI)	0.75 [0.14, 3.94]

Analysis 1.1. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 1 PTSD Diagnosis post treatment for ITT data.

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 1 PTSD Diagnosis post treatment for ITT data

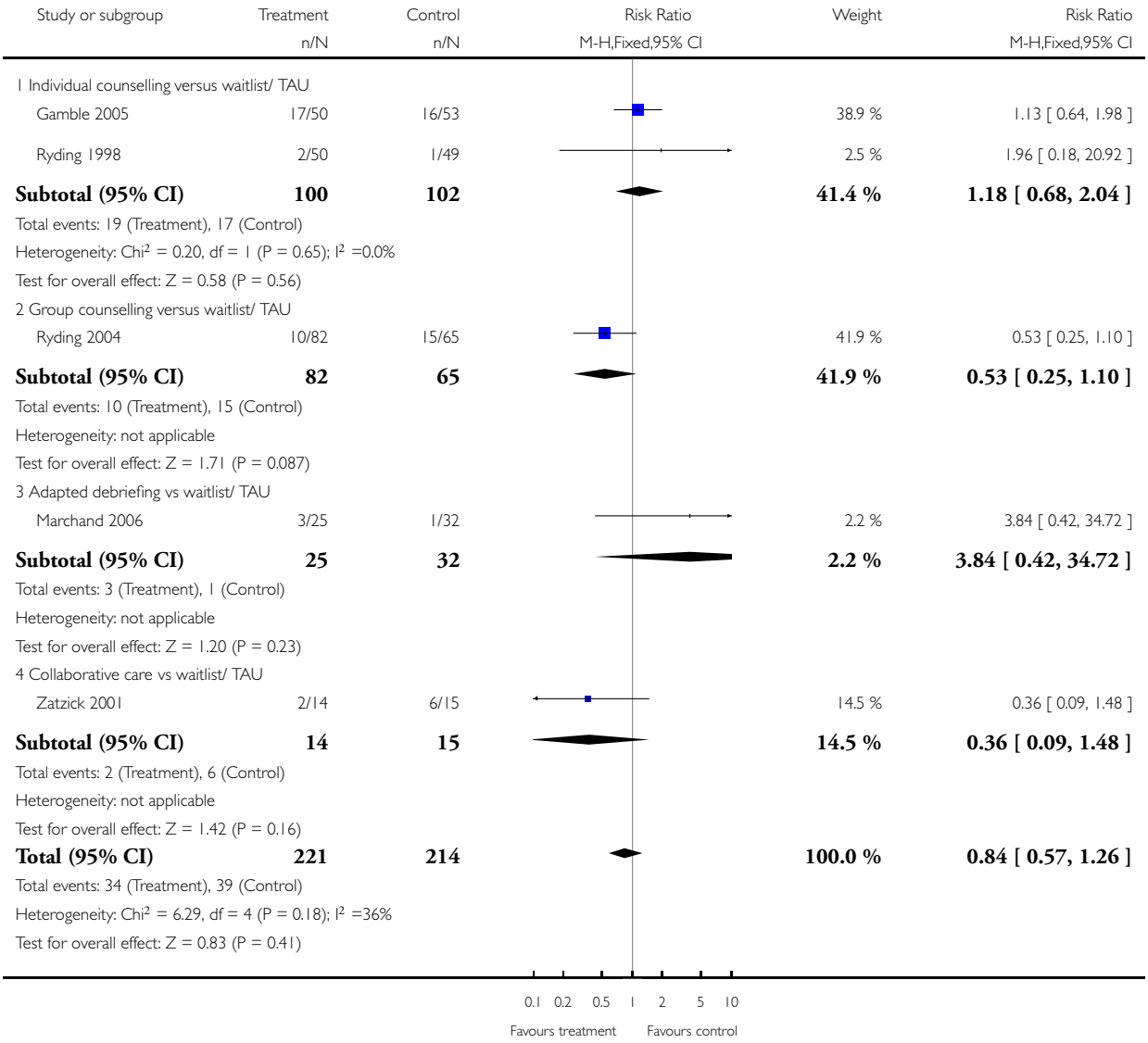


Analysis 1.2. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 2 PTSD Diagnosis post treatment for completers.

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 2 PTSD Diagnosis post treatment for completers

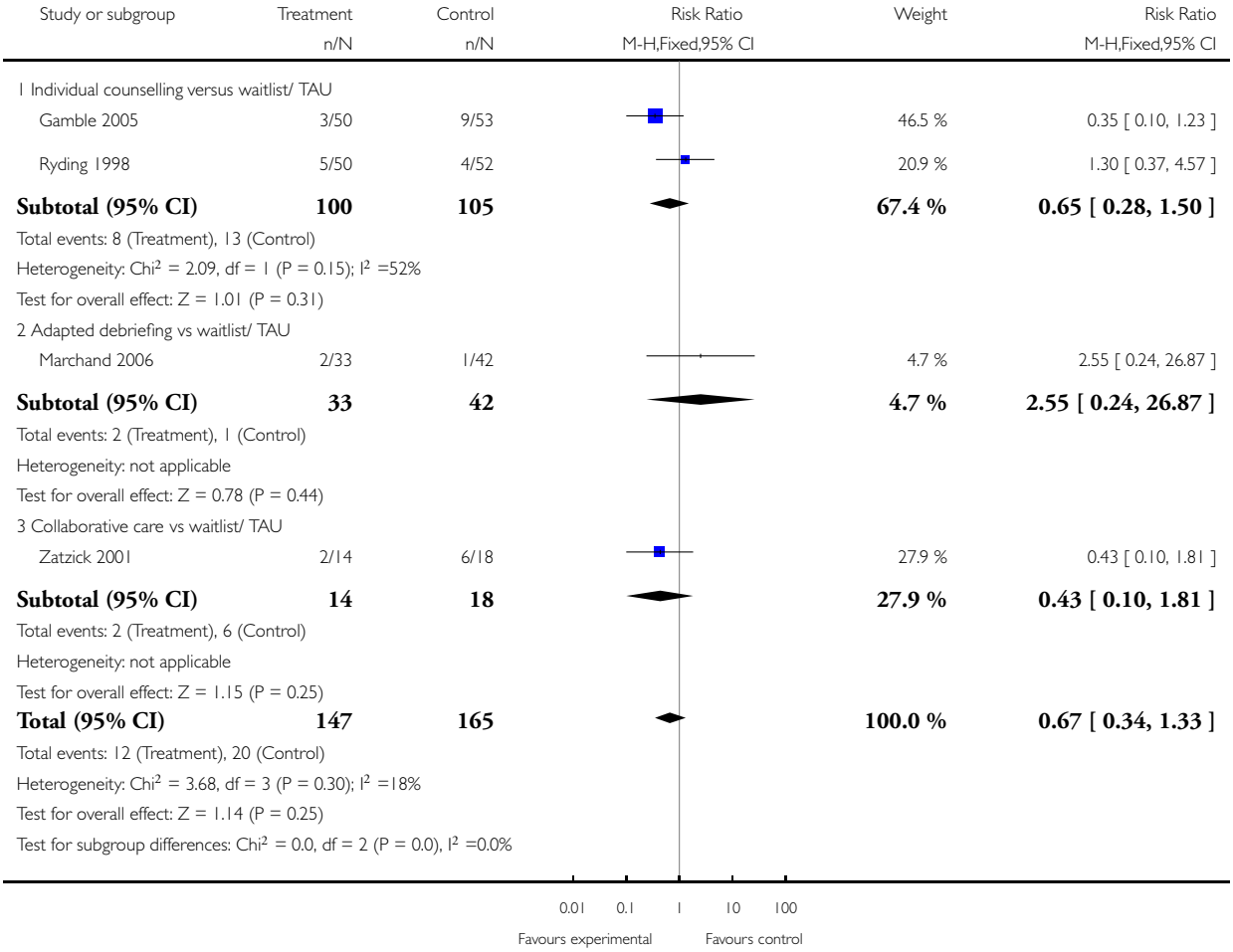


Analysis 1.3. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 3 PTSD Diagnosis 3-6 month follow-up for ITT data.

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 3 PTSD Diagnosis 3-6 month follow-up for ITT data

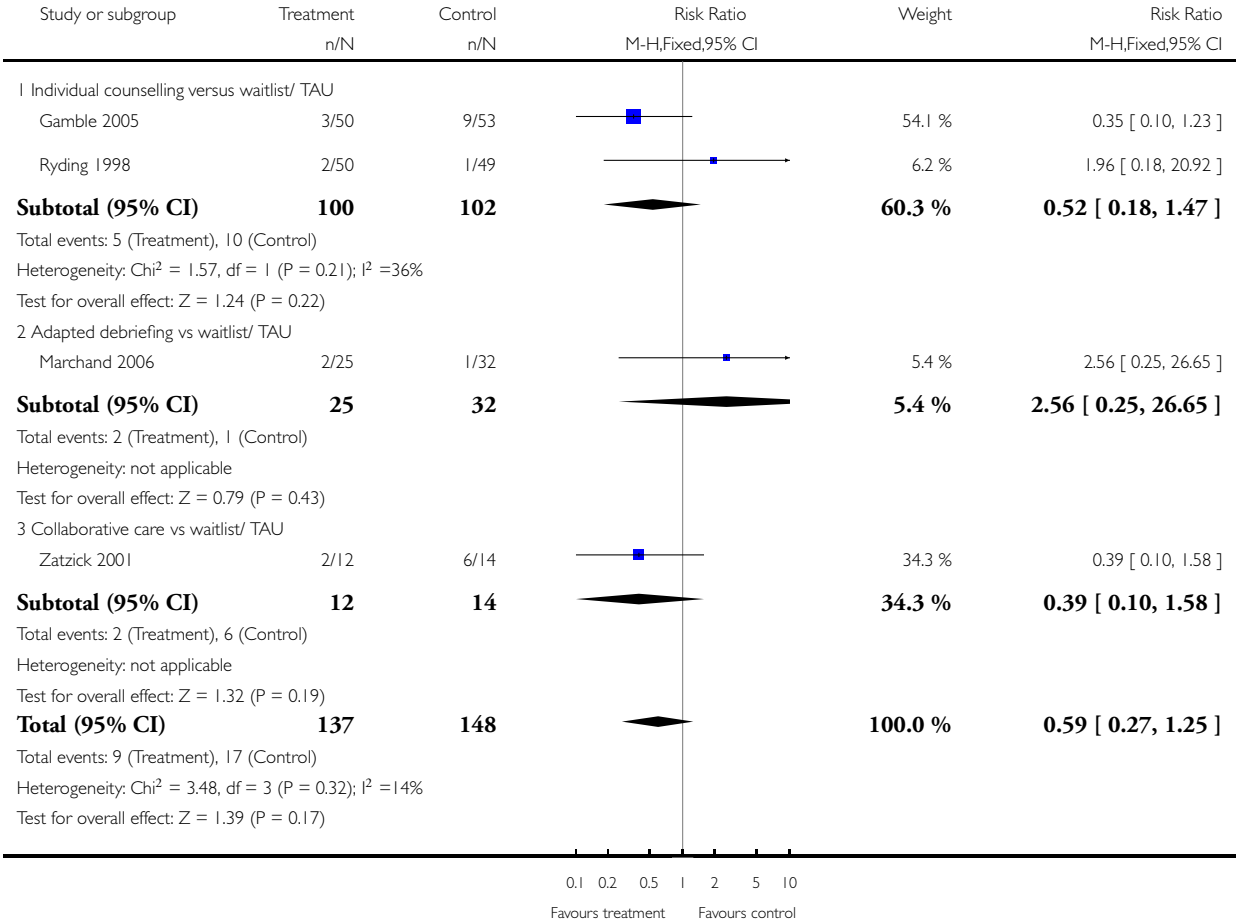


Analysis 1.4. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 4 PTSD Diagnosis 3-6 month follow-up for completers.

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 4 PTSD Diagnosis 3-6 month follow-up for completers

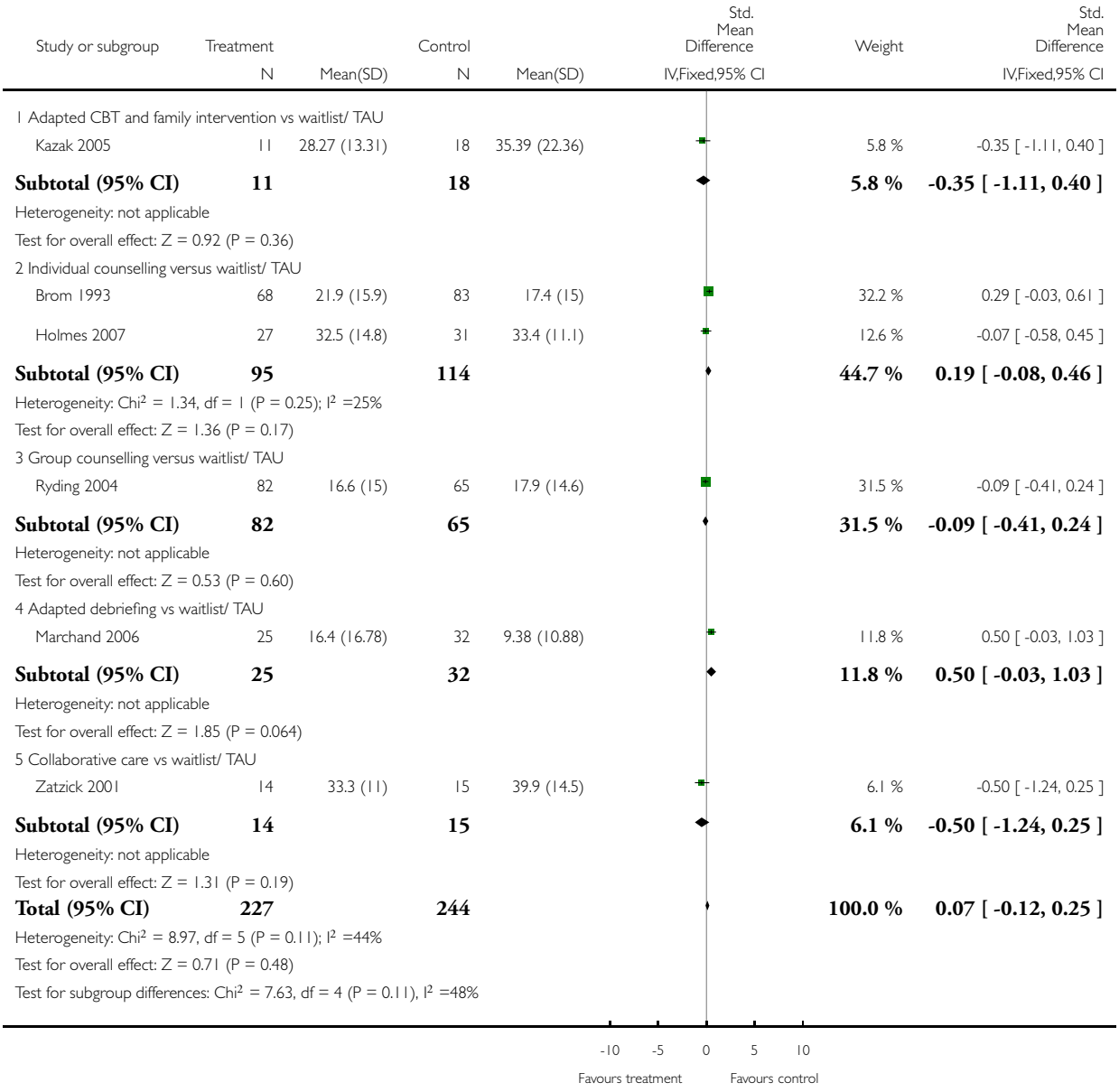


Analysis 1.5. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 5 Severity of PTSD symptoms post treatment for completers (self report).

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 5 Severity of PTSD symptoms post treatment for completers (self report)



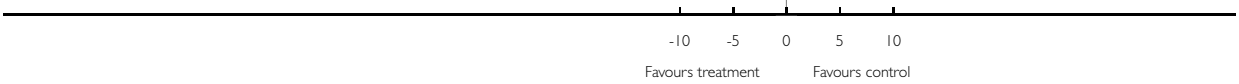
Analysis 1.6. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 6 Severity of PTSD symptoms: 3-6 month follow-up (self report).

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 6 Severity of PTSD symptoms: 3-6 month follow-up (self report)

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Fixed,95% CI	Weight	Std. Mean Difference IV,Fixed,95% CI
1 Individual counselling versus waitlist/ TAU							
Brom 1993	68	9.3 (11)	83	7.4 (11.3)		52.0 %	0.17 [-0.15, 0.49]
Holmes 2007	27	38 (19.1)	31	36.2 (17)		20.1 %	0.10 [-0.42, 0.61]
Subtotal (95% CI)	**95**		**114**			**72.1 %**	**0.15 [-0.12, 0.42]**
Heterogeneity: Chi^2 = 0.05, df = 1 (P = 0.82); I^2 =0.0%							
Test for overall effect: Z = 1.08 (P = 0.28)							
2 Adapted debriefing vs waitlist/ TAU							
Marchand 2006	25	11.28 (12.85)	32	6.34 (9.78)		19.1 %	0.43 [-0.10, 0.96]
Subtotal (95% CI)	**25**		**32**			**19.1 %**	**0.43 [-0.10, 0.96]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.61 (P = 0.11)							
3 Collaborative care vs waitlist/ TAU							
Zatzick 2001	12	42.5 (18.2)	14	36.1 (11.7)		8.8 %	0.41 [-0.37, 1.19]
Subtotal (95% CI)	**12**		**14**			**8.8 %**	**0.41 [-0.37, 1.19]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.04 (P = 0.30)							
Total (95% CI)	**132**		**160**			**100.0 %**	**0.23 [0.00, 0.46]**
Heterogeneity: Chi^2 = 1.17, df = 3 (P = 0.76); I^2 =0.0%							
Test for overall effect: Z = 1.92 (P = 0.055)							
Test for subgroup differences: Chi^2 = 1.11, df = 2 (P = 0.57), I^2 =0.0%							



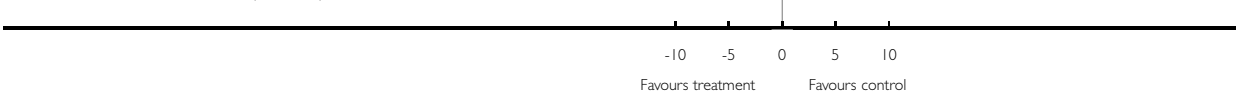
Analysis 1.7. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 7 Anxiety post treatment.

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 7 Anxiety post treatment

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 Adapted CBT and family intervention vs waitlist/ TAU							
Kazak 2005	27	4.7 (5)	31	4.1 (3.9)		55.6 %	0.13 [-0.38, 0.65]
Subtotal (95% CI)	**27**		**31**			**55.6 %**	**0.13 [-0.38, 0.65]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.51 (P = 0.61)							
2 Individual counselling versus waitlist/ TAU							
Holmes 2007	11	36.34 (10.52)	18	46.83 (14.93)		44.4 %	-0.76 [-1.54, 0.02]
Subtotal (95% CI)	**11**		**18**			**44.4 %**	**-0.76 [-1.54, 0.02]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.91 (P = 0.057)							
Total (95% CI)	**38**		**49**			**100.0 %**	**-0.26 [-1.13, 0.60]**
Heterogeneity: Tau^2 = 0.28; Chi^2 = 3.49, df = 1 (P = 0.06); I^2 =71%							
Test for overall effect: Z = 0.59 (P = 0.55)							



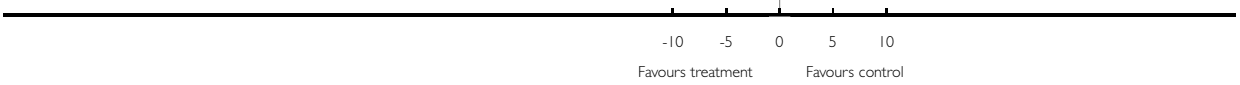
Analysis 1.8. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 8 Depression post treatment.

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 8 Depression post treatment

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Fixed,95% CI	Weight	Std. Mean Difference IV,Fixed,95% CI
1 Individual counselling versus waitlist/ TAU							
Holmes 2007	27	13.1 (12.4)	31	9.8 (7.8)		24.8 %	0.32 [-0.20, 0.84]
Subtotal (95% CI)	**27**		**31**			**24.8 %**	**0.32 [-0.20, 0.84]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.20 (P = 0.23)							
2 Group counselling versus waitlist/ TAU							
Ryding 2004	82	6.4 (4.9)	65	7.5 (4.9)		62.7 %	-0.22 [-0.55, 0.10]
Subtotal (95% CI)	**82**		**65**			**62.7 %**	**-0.22 [-0.55, 0.10]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.34 (P = 0.18)							
3 Collaborative care vs waitlist/ TAU							
Zatzick 2001	14	21.1 (12.2)	15	24.6 (14.3)		12.5 %	-0.26 [-0.99, 0.48]
Subtotal (95% CI)	**14**		**15**			**12.5 %**	**-0.26 [-0.99, 0.48]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.68 (P = 0.49)							
Total (95% CI)	**123**		**111**			**100.0 %**	**-0.09 [-0.35, 0.17]**
Heterogeneity: Chi^2 = 3.22, df = 2 (P = 0.20); I^2 =38%							
Test for overall effect: Z = 0.70 (P = 0.48)							
Test for subgroup differences: Chi^2 = 3.22, df = 2 (P = 0.20), I^2 =38%							



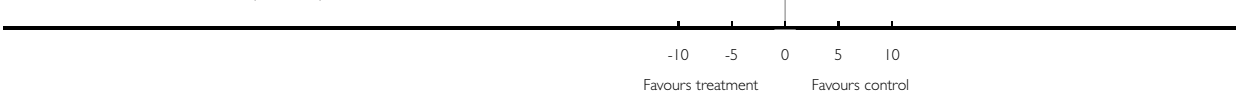
Analysis 1.9. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 9 Depression at 3-6month follow-up.

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 9 Depression at 3-6month follow-up

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 Individual counselling versus waitlist/ TAU							
Holmes 2007	27	12.3 (11.2)	31	12.3 (11.5)		56.9 %	0.0 [-0.52, 0.52]
Subtotal (95% CI)	**27**		**31**			**56.9 %**	**0.0 [-0.52, 0.52]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.0 (P = 1.0)							
2 Collaborative care vs waitlist/ TAU							
Zatzick 2001	12	29.6 (17.1)	14	16.7 (11.8)		43.1 %	0.86 [0.05, 1.68]
Subtotal (95% CI)	**12**		**14**			**43.1 %**	**0.86 [0.05, 1.68]**
Heterogeneity: not applicable							
Test for overall effect: Z = 2.08 (P = 0.037)							
Total (95% CI)	**39**		**45**			**100.0 %**	**0.37 [-0.47, 1.21]**
Heterogeneity: Tau^2 = 0.25; Chi^2 = 3.09, df = 1 (P = 0.08); I^2 =68%							
Test for overall effect: Z = 0.87 (P = 0.38)							

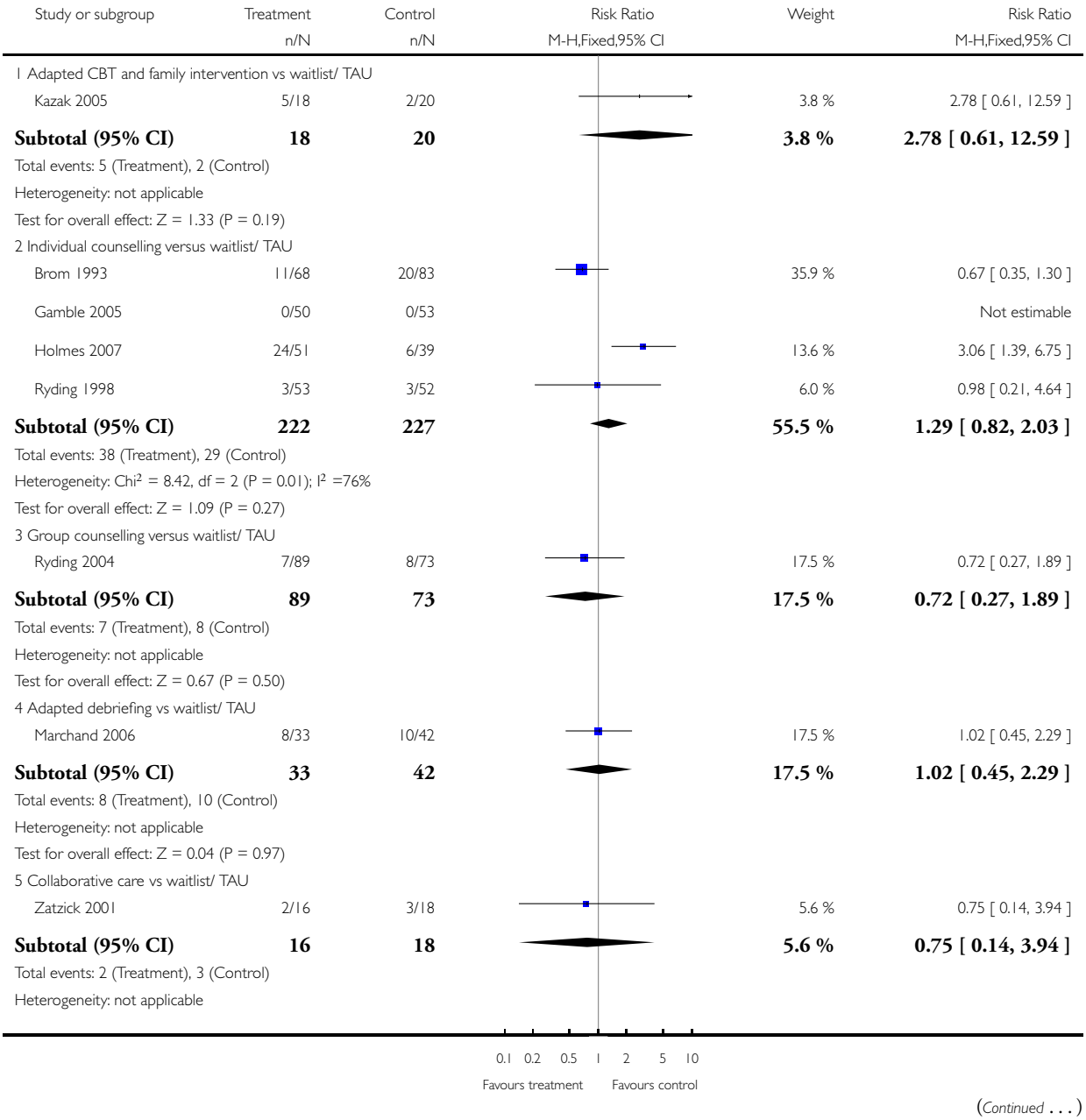


Analysis 1.10. Comparison 1 Any early psychological intervention vs waiting list/ usual care, Outcome 10 Leaving the study early due to any reason.

Review: Multiple session early psychological interventions for the prevention of post-traumatic stress disorder

Comparison: 1 Any early psychological intervention vs waiting list/ usual care

Outcome: 10 Leaving the study early due to any reason



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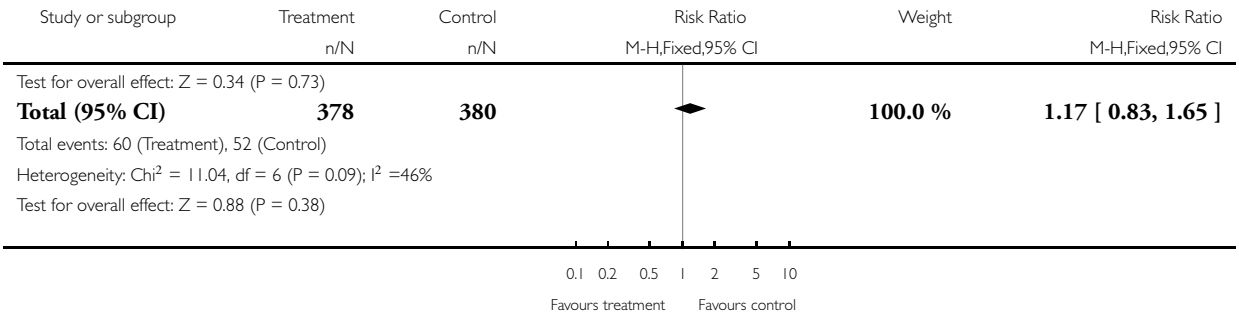

ADDITIONAL TABLES

Table 1. Additional methodological and reporting issues 1

Study	Participants satisfy PTSD A2 criteria	Use of multimodal measures	Assessor reliability	Manualised, replicable, specific treatment	Reported level of therapists' training	Treatment adherence	Use of a control or comparison group	Clear description of participant group	Record of exclusion criteria and number of exclusions and refusals reported
Andre 1997	No	No	No	No	No	No	TAU	Partial	Inadequate
Brom 1993	No	No	No	No	No	No	TAU	Inadequate	Inadequate
Gamble 2005	Yes	Yes	No	No	Yes	No	TAU	Adequate	Adequate
Gidron 2001	No	No	No	No	No	No	Minimal treatment	Partial	Inadequate
Gidron 2007	No	No	No	No	No	No	Minimal treatment	Partial	Partial
Holmes 2007	No	Yes	No	No	Yes	Yes	TAU	Adequate	Adequate
Kazak 2005	No	No	No	Yes	Yes	Yes	TAU	Adequate	Adequate

Table 1. Additional methodological and reporting issues 1 (*Continued*)

Marchand 2006	Yes	Yes	No	No	Yes	Yes	Wait list	Adequate	Inadequate
Ryding 1998	No	No	No	No	Yes	No	TAU	Partial	Partial
Ryding 2004	No	No	No	No	Yes	No	TAU	Partial	Adequate
Zatzick 2001	No	No	No	No	Yes	Partial	TAU	Adequate	Adequate

Table 2. Additional methodological and recording issues 2

Study	Non-confounded conditions	Power calculation reported	Adequate follow-up period	Information on comparability and adjustment for differences in analysis	Details on side effects	Presentation of results	Clear and appropriate statistical analysis	Justified conclusions
Andre 1997	Not reported	No	3-6 months	Unclear	No	Inadequate	No	No
Brom 1993	Not reported	No	3-6 months	Unclear	No	Partial	No	No
Gamble 2005	Dealt with	No	3-6 months	Adequate	No	Adequate	Yes	Yes
Gidron 2001	Not reported	No	3-6 months	Unclear	No	Inadequate	Yes	Yes
Gidron 2007	Dealt with	No	3-6 months	Adequate	No	Inadequate	No	No
Holmes 2007	Dealt with	Yes	3-6 months	Adequate	Yes	Adequate	Yes	Yes
Kazak 2005	Dealt with	No	Before 3 months	Unclear	No	Inadequate	Yes	Yes
Marchand 2006	Dealt with	No	3-6 months	Unclear	No	Adequate	Yes	Yes
Ryding 1998	Not reported	No	3-6 months	Unclear	No	Inadequate	Yes	Yes

Table 2. Additional methodological and recording issues 2 (*Continued*)

Ryding 2004	Dealt with	Yes	3-6 months	Adequate	No	Inadequate	Yes	Yes
Zatzick 2001	Dealt with	No	3-6 months	Unclear	No	Inadequate	Yes	Yes

Table 3. Summary of results for interventions from single studies

Comparison	Study	Follow-up	Sample (n)	RR	WMD
Severity of PTSD (clinician administered)	Gamble 2005	Initial	102		-0.64 (-1.94, 0.66)
Severity of PTSD (clinician administered)	Gamble 2005	3 months	103		-1.29 (-2.47, -0.11)
Severity of PTSD (self report) ITT data	Marchand 2006	Initial	75		7.34 (0.04, 14.64)
Severity of PTSD (self report) ITT data	Marchand 2006	3 months	75		5.77 (1.03, 12.57)
PTSD diagnosis	Gidron 2001	Initial	17	0.28 (0.04, 2.02)	

WHAT'S NEW

Last assessed as up-to-date: 31 July 2008.

Date	Event	Description
24 February 2010	Amended	Minor changes to contact details of three authors (including contact author)

HISTORY

Protocol first published: Issue 1, 2008

Review first published: Issue 3, 2009

Date	Event	Description
17 February 2010	Amended	Search strategy amended; review link updated; contact author's email address updated; co-author's name and title corrected
1 February 2009	Amended	Converted to new review format.
1 October 2008	Amended	The decision was taken to split the research question proposed in the original protocol 'Multiple session early psychological interventions for prevention and treatment of post-traumatic stress disorder' into two reviews (one on prevention, and one on treatment). The title of this review changed at that time. The original protocol remains on the Cochrane Library until such time as the review on treatment is published

CONTRIBUTIONS OF AUTHORS

NR: Writing of the protocol and review. Underook quality assessment and data entry.

NJK: Commentary on the protocol and review. Underook quality assessment and recording of data.

JK: Commentary on the protocol and review. Underook quality assessment.

JIB: Offered supervision of the protocol development and commentary on the protocol and review. Writing of the discussion section of the review.

DECLARATIONS OF INTEREST

None

SOURCES OF SUPPORT

Internal sources

- Professor Robert Newcombe, Department Primary Care and Public Health, UK.

Statistical advice

External sources

- No sources of support supplied

INDEX TERMS

Medical Subject Headings (MeSH)

Cognitive Therapy [methods]; Desensitization, Psychologic [methods]; Psychotherapy, Brief [* methods]; Randomized Controlled Trials as Topic; Stress Disorders, Post-Traumatic [*prevention & control; psychology]; Time Factors

MeSH check words

Female; Humans; Male