Scoping Review: Early Post-Trauma Interventions in Organisations

Final Report

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Abstract

Background
In some organisations, traumatic events are routine experiences. This can be from direct exposure in the case of fire-fighters, paramedics, and police officers, or indirect exposure when dealing with victims of rape or child abuse (MacEachern, Jindal-Snaps, & Jackson, 2011). Organisational productivity can be badly affected following a traumatic incident which has caused distress to workers subsequently decreasing productivity (McFarlane & Bryant, 2007; Tehrani, in press). A NICE review (2005, updated in December 2018) of PTSD management in primary and secondary care left a significant gap in guidance for emergency response organisations. This review was designed to identify previous research which evaluated the use of early interventions following exposure to primary or secondary trauma, to consider the effectiveness of early interventions models and to make recommendations as to the appropriateness of each model’s use as an early trauma intervention specifically within the police force.

Methods
A scoping review was conducted to examine early interventions for trauma with staff in roles including emergency response and humanitarian aid (including military responders during peace-keeping missions) potentially exposed to trauma. Relevant data was extracted from included studies and outcomes assessed using meta-ethnography. Several expert consultations were conducted to establish perceived ‘best practice’ from stakeholders and practitioners.

Results
Fifty studies of mixed quality met the inclusion criteria for this review. Synthesis of study outcomes using meta-ethnography found that early interventions help emergency responders to manage post-incident trauma when the interventions are delivered in a manner that respects organisational culture; are supported by the organisations and senior management and, harness existing social cohesion and peer support systems within teams.

Conclusion
This review demonstrates that early interventions support emergency responders following exposure to trauma when they are tailored to the needs of the population, supported by the host organisation and harness existing social cohesion and peer processes within a team or unit.
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Executive Summary

In the weeks and months following a traumatic incident, organisational productivity can be badly affected. For example, many workers experience upset and distress which can decrease productivity to as low as 35% of normal capacity. In some organisations, traumatic events are routine experiences. This can be from direct exposure such as in cases where there is direct threat to life or being exposed to seriously injured people, or indirect exposure such as dealing with victims of rape or child abuse.

In 2005, NICE carried out a review of early interventions to inform guidelines for the management of PTSD in primary and secondary care. The NICE report left a significant gap in guidance for those working in emergency response. Specifically, it did not address potential impracticalities of delivering interventions, such as those delivered by occupational health services, in the first month following traumatic exposure. In response to comments made by the College of Policing prior to the release of the December 2018 update of the NICE guidance, the developers of this guidance stated that: ‘The guidance can…inform the policy and practice of police forces in relation to the assessment and treatment of PTSD but it does not offer guidance to occupational health services’. However, there has been increasing evidence that NICE guidance has had a detrimental impact on the body of research essential in establishing best practice for early interventions. For example, the recommendation against the use of Psychological Debriefing or CISD as an intervention for trauma. This assertion is based on two studies subsequently found to be methodologically flawed, and without recognition of the increasing demonstration of the effectiveness of early interventions.

This scoping review identifies research examining the use of early interventions for trauma following exposure to primary or secondary stressors, and to evaluate the evidence for the effectiveness of each model. The scoping review examined early interventions for trauma with staff in roles including emergency response, military and humanitarian aid where there was a potential for exposure to trauma. Fifty studies were identified that met criteria for inclusion in this review which fit into the categories of early intervention, preventative measures and trauma therapy. Of the included studies, seven contained qualitative data, fourteen were longitudinal and ten were randomised control trials. Interventions were administered in response to natural disasters, terror attacks, peacekeeping in a conflict zone, healthcare emergencies and patient fatalities, shootings, automotive/air/rail accidents, public suicide and interviews with victims of child abuse. Relevant data was extracted, and outcomes assessed using meta-ethnography. As well as assessing the current evidence base, ten expert consultations were undertaken allowing for establishment of perceived ‘best practice’ from stakeholders and practitioners.

Synthesis of outcomes using meta-ethnography found that early interventions help emergency responders to manage post-incident trauma when they are delivered in a manner that respects distinct organisational culture; are supported by organisations and senior management and; harness existing social cohesion and peer support systems within teams. It is notable that early interventions
are not primarily designed to reduce or prevent PTSD symptom severity; this is reflected in the outcomes of included studies that conducted formal assessment of intervention efficacy. Where there was an absence of formal outcomes, subjective benefits to personnel are considered, perhaps most prominently emergency responders were found appreciative of support offered, believing that it facilitated post-incident recovery. This review demonstrates that early interventions support emergency responders following exposure to trauma when: tailored to the needs of the population; supported by the host organisation and; harness existing social cohesion and peer processes within a team or unit. The outcomes of this review can be used to support the design and implementation of enhanced early interventions in organisational settings and can inform future iterations of NICE guidance and recommendations.

**Recommendations**

The following factors were identified as being most important when evaluating early interventions for psychological trauma in emergency response organisations:

- It is important to adhere to the main components of an intervention model. However, in most cases, practitioners departed from recommended practice (with only a third adhering). This includes varying the format (group vs one-on-one), number and duration of sessions. Deviations from the protocol were often intended and necessary due to the organisational context, for example, the workload and nature of the work can mean that personnel cannot necessarily attend a session within the model’s intended timeframe, and instead have a delay in receiving the early intervention. Allowances often must be made and, as we see in this review, they are. It should be noted that based on the information provided by included studies we cannot determine whether varying from a protocol had any significant influence over the participant’s wellbeing or the efficacy of the intervention.

- Providing ample support for employees requires understanding distinct organisational cultures. The success of an intervention becomes more likely when practitioners cater to specific needs and work to overcome logistical (e.g. workload) and cultural barriers (e.g. stigma).

- Management plays an important role in facilitating posttraumatic recovery in emergency responders. In this review it was found that the most significant benefits from an early intervention occurred when it was part of a wider programme of support mandated by the organisation. Managers were important in the referral and assessment of work-related outcomes; as they had the ability to assign organisational resources; and to create a supportive and accepting workplace environment.

- Within the initial windows of opportunity (i.e. before formal therapy), peer group processes play an important role in the management of post-incident stress, buffering more significant issues that may appear down the line. In this review, recovery was more likely to occur when emergency responders were given the opportunity to support one another. Outcomes suggest
that when a worker has the informal support of their peers following traumatic exposure, they are less likely to need formal occupational health intervention or referral to clinical treatment. In this way, the efficacy of peer interventions doesn't come from having a single trauma-informed or trained staff member, but rather comes from the camaraderie and sense of common fate that emerges from a shared trauma.

- Early interventions (debriefings in particular) are valued by emergency responders. In this review employees derived a level of subjective satisfaction and appreciated the opportunity to discuss their experiences. The results of the review also indicate that objective measures of PTSD do not fully capture the positive outcomes emerging from an early intervention.

- Additional outcomes from the assessment of early interventions are needed that incorporate a range of different outcome measures to characterise benefits that align with social well-being. This might include measures of engagement in potentially harmful behaviours such as alcohol reliance as well as organisational benefits including length of absence from work.

Further evidence from this review which was supported by the outcomes of stakeholder consultations are presented here as additional recommendations in the delivery of early interventions for trauma:

- Whilst it is not always possible for practical and social support to be offered at the earliest possible time, it is beneficial to acknowledge the trauma where possible. This may simply be through recognition of the difficulty that the member of staff is having following exposure to trauma or access to screening. This is facilitated by the development of a supportive culture in which staff are confident to report trauma exposure and subsequent need for psychosocial support. Referral for those who require it should take place as soon as possible, and ideally within a week.

- Factors suggested to enhance engagement in early-interventions that are offered to trauma-exposed staff include:
  - Familiarity with both the facilitator and the process. This helps foster trust in the motives of the supporting organisation. This can be achieved by the intervention being provided by someone with familiarity with the worker's role. For example, police officers to be supported by a trained facilitator (such as occupational health or welfare counsellor) from within policing.
  - Not only are managers often the most familiar person to the staff member and therefore in a favourable position to provide initial support, they can also aid in increasing staff engagement by modelling responses themselves. This might involve managers being the first to seek support following exposure to a traumatic event. This approach is modelled by defusing/demobilising in which managers are trained to think about the wellbeing of staff.
  - Confidentiality should be ensured to those who attend intervention support. Beliefs that seeking psychosocial support makes subsequent career advancement improbable are causes of prevention in engagement. Whilst such cultural artefacts
may be difficult to change, ensuring confidential practice is a way to encourage engagement in early interventions.

- It is important for organisations to reach out to those exposed to traumatic events. This should coincide with encouraging and supporting personnel to take responsibility for their own wellbeing.

- Education is important in increasing understanding of early interventions which may increase effectiveness and engagement. Potentially trauma-exposed staff should be supported to increase pre-knowledge of support available to them and the process that may occur (screening; intervention; social support etc.) in the event of experiencing trauma.

- Opportunities for intervention providers to receive training should be available to staff on an ongoing basis. Perhaps most importantly this includes training in the recognition of danger signs in staff and how to refer people on for intervention support.
Introduction

By their nature, traumatic events cause the most psychological damage when they occur without warning in situations that are emotionally challenging and difficult to control (Paton & Violanti, 1996). Faced with the unexpected demands of a trauma hazard, employees can experience shock, fear and horror (Paton & Violanti, 2011). In some organisations, traumatic events are routine experiences for workers and may be due to direct exposure such as in responding to incidents involving serious injury or their own life being threatened or as a result of indirect exposure as in cases of supporting victims of rape or child abuse (MacEachern, Jindal-Snaps, & Jackson, 2011). The police workforce, for example, involves roles regularly exposed to varying levels of traumatic stress: the most common forms are primary (responding to murders, suicides, and traffic accidents) and secondary (investigating domestic violence, child abuse, and road deaths). The least common form of trauma comes from responding to mass incidents (terrorist attacks, rail/air accidents, riots, and explosions; Hesketh & Tehrani, 2018; Tehrani & Hesketh, 2018).

Effects of trauma on personnel

Mental preparation is important when engaging in dealing with a traumatising event as it helps the police officer to anticipate what they will be facing and how they need to respond (Tehrani & Piper, 2011), but being aware of the nature of the trauma there can still be a significant impact on workers and their ability to function. While most emergency responders handle the psychological impact of dealing with the demands of a mass incident, many are affected and require support (Tehrani, 2016; BPS, 2017) yet their needs are often overlooked (Brandt, Fullerton, Saltzgaber, Ursano, & Holloway, 1995).

Following an unexpected traumatic exposure many workers experience upset and distress which may reduce their productivity, increase their levels of absence, and cause higher levels of accidents and errors (McFarlane & Bryant, 2007). For most people, the trauma response will reduce over the next few days and weeks. However, for some the symptoms continue, with the employee going on to develop mental health problems including post-traumatic stress, anxiety, depression, and compassion fatigue (Huddlestone, Paton, & Stephens, 2006).

Effects of trauma on organisations

Where there is inadequate support to officers and staff in the weeks and months following a traumatic incident, organisational productivity can be adversely affected with traumatised workers performing at reduced levels. In a group of traumatised emergency service workers, perceived capability to perform at work was estimated to be 34.6% of their normal level of performance (Tehrani, in press).

The responsibilities of organisations
Organisations have a moral and legal duty to ensure that they meet their duty of care towards their workers (The Management of Health and Safety at Work Regulations, 1999). For ‘trauma-exposed’ organisations, maintaining the psychological wellbeing of workers is essential if the services that the organisation provides are to meet the standards of performance required by customers and other stakeholders.

To reduce the impact of traumatic exposures it is important to provide immediate practical support to those engaged in dealing with a trauma or disaster, and to ensure that emergency response staff are demobilised (such as standing down from ‘combat-ready’ status) at the end of each shift in order to allow for emotional and mental processing of the event and time to promote self-care and recovery. Although debriefing is not designed to prevent or treat PTSD (Regal and Dyregrov, 2012; Ruck et al., 2013), the provision of an organisational early intervention following a traumatic incident meets several needs for leaders and their teams including: a) mutual support that is highly valued by workers, b) an opportunity to identify workers requiring clinical support, c) an increase in level of social cohesion, d) a reduction in harmful responses (e.g. alcohol abuse), e) a reduced level of sick-leave, and f) increased performance (Creamer et al., 2012).

**Early Intervention Approaches**

Brief crisis intervention, often given the generic term *psychological debriefing*, is designed in part to ease emotional distress following exposure to trauma (Raphael & Wilson, 2000). In an organisational context, such as emergency services, Mitchell (1983) described debriefing as a “meeting between the rescue worker and a caring individual (facilitator) who is able to help the person talk about his feelings and reactions to the critical incident” (p. 37) and should be delivered to groups. Advocates of debriefing posit that the benefits of early interventions such as debriefing are in its delivery soon after the trauma (often between two and 10 days), its provision of psychosocial support and opportunity for expression of emotions about the trauma experienced, and its provision of education about stress management. In addition to mitigating distress, early interventions may reduce absence in trauma-exposed employees (McNally, Bryant and Ehlers, 2003).

There are two main types of early intervention following trauma: 1) support-focussed interventions including Psychological First Aid (PFA); and 2) trauma-focussed interventions including Critical Incident Stress Debriefing (CISD), Psychological Debriefing (PD), and Trauma Risk Management (TRiM).

Hobfoll and colleagues (2007) developed the five principal purposes of PFA as instilling feelings of safety, calmness, self and community efficacy, connectedness and hope. A systematic review of PFA described the intervention as being aimed at helping people deal with the experience and consequences of a disaster or adversity (Dieltjens, Moonens, Van Praet, DeBuck, & Vandekerckhova, 2014). The review concluded that although PFA is viewed as an important approach for disaster-
affected populations, there was a lack of high-quality experimental and observational studies to demonstrate its effectiveness.

There are many trauma focussed interventions based on debriefing principles. Three of the best known are Critical Incident Stress Debriefing (CISD; Mitchell, 1983), Psychological Debriefing (PD; Dyregov, 1989), and Trauma Risk Management (TRiM; Jones, Roberts, & Greenberg, 2003). The goal of debriefing is to apply crisis intervention and educational processes to mitigate psychological distress by adopting a staged process which explores: a) the traumatic incident (Facts), b) reactions and sensory impressions (Feelings), and c) future planning and coping (Future). CISD and PD also examine thinking and provide opportunities for participants to normalise their trauma-based reactions and symptoms. Although Trauma Risk Management has been described as not being a form of debriefing, the TRiM process was based on a model of debriefing developed within the Metropolitan Police (Braddon & Tait, 1993). The additional element in the TRiM process was the introduction of a simple ten item risk assessment tool used to identify situational and personal risk factors (Greenberg, Langston, & Jones, 2008).

Current guidance
In 2005, NICE carried out a review of current practice regarding the use of early interventions to inform guidelines for the management of PTSD in adults and children in primary and secondary care (NICE, 2005). The analysis provided no evidence of any significant reduction in PTSD symptoms following debriefing however one study that had been undertaken by the co-chair of the NICE guideline development group (Bisson, Jenkins, Alexander, & Bannister, 1997) found a slight increase in trauma symptoms at 13 months’ post-injury. Based on this study the development group recommended against carrying out brief, single-session interventions for individuals focusing on the traumatic incident as a treatment for PTSD. The NICE group did however acknowledge that it is good practice to provide general practical and social support and guidance to people following a traumatic incident, along with an acknowledgement of the psychological impact of a traumatic event. The guidance produced by NICE examined several studies using a model of debriefing which is atypical in that it involved a single session, of variable but usually short length, and content rather than group debriefing within an organisation (Hawker & Hawker, 2015).

The NICE guideline is produced for those treating PTSD in NHS funded-services and recommends that an individual trauma-focussed CBT intervention should be offered to adults who have acute stress disorder or symptoms of PTSD and have been exposed to one or more traumatic events within the last month. The updated guidance includes a recommendation that users be aware of primary and secondary work-related trauma exposure (NICE, 2018ii: Recognition of post-traumatic stress disorder, section 1.1.2). However, it does not address potential impracticalities of delivering interventions, such as by occupational health services, in the first month following traumatic exposure.
The impact of the guidelines published by NICE (2005) led to some organisations misinterpreting the guidance as recommending a total ban on the use of debriefing (Hawker and Hawker, 2015). This disregards the fact that the guidance states that its comments related to the use of debriefing as a treatment, rather than as a tool of community support or social cohesion. Furthermore, the evidence on which the current NICE guidelines are based (Rose, Bisson, Churchill, & Wessely, 2002) considers RCTs to be the gold-standard of evidence; the authors of this report have no argument with this position. However, only one RCT met the pre-defined inclusion criteria of this evidence collation, and methodology of included studies was considered to be poor overall. This study contributed to the development of the current NICE guidelines that propose trauma-focussed CBT as a PTSD therapeutic treatment. It is worth re-iterating at this point that early-interventions for trauma are not designed to treat PTSD (i.e. reduce symptoms). Whilst the developers of this guidance, in response to the BPS (NICE, 2018i p.364), state that their recommendation to not offer psychologically-focussed debriefing is not a recommendation against early intervention but instead is a recommendation to provide individual trauma-focussed CBT, this review suggests that the use of evidence for treatment of PTSD within the first month following trauma-exposure is not appropriate when early interventions are designed to be used within this one month time-frame.

The recommendation against the use of Psychological Debriefing or CISD is based on two studies subsequently found to be methodologically flawed (Hobbs, Mayou and Harrison, 1996; Bisson, Jenkins and Alexander, 1997). In recent years, there has been an increasing body of evidence to demonstrate the effectiveness of early interventions (Dyregov and Regel, 2001) and that the NICE guidance has had a detrimental impact on the body of research essential in establishing best practice in terms of early post-trauma interventions (Hawker, Durkin, & Hawker, 2011; Dyregov & Regel, 2012).

The current review
The aim of this scoping review is to identify previous research which has examined the use of early interventions for trauma with staff in roles including (but not limited to): emergency response, military and humanitarian aid following exposure to primary or secondary trauma. In addition to collating information as to what intervention models are currently available, synthesis of results allowed a for a report on the effectiveness of models and make recommendations as to the appropriateness of each model’s use as an early trauma intervention within the police force. Included was any study where the outcomes related to symptoms of mental health and psychosocial wellbeing. Studies included RCT, qualitative, and quantitative experimental designs. This review scrutinised the quality of included studies, particularly regarding the protocol of the intervention model used and subsequent correct and appropriate delivery of the intervention model. For example, the included studies were assessed for the appropriate timing of the intervention, whether a trained professional delivered the intervention, and whether the model was designed for use with individuals or groups. Further quality assessment pertained to the appropriateness of outcome assessment and the reporting of the results.
Methods

Search strategy

One large, broad search was used to locate articles for this review. This combined three smaller searches. Search 1 included trauma terms, such as “psychological trauma”, “burnout”, and “distress”. Search 2 included terms relating to early interventions, such as “debriefing”, “stress management”, and “post trauma”. Search 3 included terms relating to the emergency services such as “rescue”, “police” but extended to other occupational groups that might also be exposed to trauma such as “Royal Mail” and “transport”. The full search strategy can be seen in Appendix A. One author (MTR) ran the searches on Embase, Global Health, Health Management Information Consortium, MEDLINE, and PsycINFO. In addition, the Journal(s) of Traumatic Stress, Emergency Medical Services, and Mass Emergencies and Disasters were hand-searched across all years. One study was also included from ‘Workplace Trauma’ (Tehrani, 2004, p. 214).

Conference proceedings were also searched for relevant publications including the BPS symposia ‘Early interventions for trauma’ held on 25th November 2014 and 8th January 2015 and ‘Early responses/interventions in the aftermath of traumatic events’ held in 2017. Finally, an e-mail alert was created on Google Scholar to run in tandem with the database search. Resulting citations were downloaded to EndNote software version X8 (EndNote, Philadelphia, PA), where duplicate items were immediately removed.

MTR evaluated titles for relevance and removed any clearly not relevant to the review. Next, MTR, HC, LG, and DW used the inclusion criteria to screen abstracts of the remaining citations and then finally to screen full texts. Reference lists of all remaining articles were then hand-searched for any additional, relevant studies: if the included articles contained any citations which appeared to be relevant and had not been found through the search, these papers were identified and assessed for their relevance by abstract and then by full-text.

Inclusion criteria

Articles were eligible for inclusion if they:

- Were written in English;
- Included original (experimental) data, whether qualitative or quantitative;
- Examined an early intervention for trauma with members of any occupational service potentially exposed to trauma, whether exposure is expected or unexpected;
- Examined the impact of an early intervention for trauma on mental health outcomes, social outcomes, and/ or organisational outcomes.
Data extraction and synthesis

Spreadsheets were designed with the following headings: Full Reference; Study citation; Design; Incident Described; Sample (N, Gender, Age); Occupation; Intervention; Outcome assessed; and Results. There are five additional columns of data which refers to the key concepts emerging from the meta-ethnography. These were Adherence, Organisational context, Governance, Social support, and Perceived benefits. These data were extracted by one author (MTR) from all the studies which remained after full-text screening.

Meta-ethnography

Meta-ethnography (Noblit & Hare, 1988) is an interpretative synthesis approach wherein a whole is built up of studies of its parts much in the way of grounded theory. However, unlike grounded theory which can employ a ‘like for like’ approach to theoretical sampling where the same method is used for data generation between comparable studies, meta-ethnography allows for a reciprocal translational analysis (RTA) approach meaning concepts can be ‘translated’ from individual studies into one another, resulting in ‘lines of argument’ (Britten et al., 2002). Due to this approach, meta-ethnography was used to identify primary themes (first-order constructs) and secondary themes and concepts (second-order constructs; interpretations by study authors). Synthesis involved determining relatedness by examining primary and secondary themes across studies and developing third-order constructs (reviewer interpretations; Atkins et al., 2008).

Quality appraisal

Research identified for inclusion in this review was individually appraised for quality. It is important to note the differences between the methodology used here and that of previous research cited as evidence for the effectiveness of early interventions for trauma, specifically evidence cited in the development of current NICE guidelines for psychological debriefing (Rose, Bisson, Churchill, & Wessely, 2002). In contrast to Rose et al, who only included RCT and quasi-randomised trial studies in their review, this review adopted a broader inclusion criteria for this scoping review. As was the case in the analysis by Rose et al., robust tool to appraise risk of bias and quality of included studies was required to ensure that evidence cited in this review was weighted towards studies which assess outcomes from interventions delivered as they were intended (such as in terms of timing, length, training, and independence of the debriefer) without over-generalising results. This was achieved using Downs and Black’s checklist for assessment of healthcare intervention methodology (Downs & Black, 1998). This checklist has been identified as amongst the most highly rated tools (in a sample of 213 tools) for quality assessment of both randomised and non-randomised research designs, meeting most criteria for internal and external validity (Deeks et al., 2003). In addition, the Centre for Reviews and Dissemination Guidance for Undertaking Reviews in Healthcare found Downs and Black’s checklist to be one of only 3 (out of 200 reviewed) to be suitable for quality assessment of studies using a cross-sectional design and to have been ‘extensively validated’ in Systematic Reviews in the Social Sciences: A Practical Guide (Petticrew & Roberts, 2006). This tool assess quality in five
Results

The initial search yielded 24,989 studies. Two-hundred and eighty-three of these were relevant to the topic of early interventions for psychological trauma, and fifty were relevant for inclusion in this review (Figure 1).

Figure 1. PRISMA flow diagram detailing the database search.
Study characteristics
Seven (14%) of the studies contained qualitative data, fourteen (27%) were longitudinal, ten (20%) were randomised control trials. The disasters described in the studies included natural disasters (n = 5), terrorist attacks (n = 4), peacekeeping in a conflict zone (n = 15), healthcare emergencies and patient fatalities (n = 3), shootings (n = 2), automotive/air/rail accidents (n = 5), public suicide (n = 2), and interviews with victims of child abuse (n = 1). There were a number of studies in which the incident described varied between participants (n = 10) and several studies which did not disclose specific details (n = 3). The study characteristics are presented in Table 1 and a detailed description of the interventions used in each study is presented in Table 2.

Overall, the quality of the constituent studies was mixed (Figure 2). Studies tended to be strongest in reporting methodology and results, with over 95% giving a clear description of the measures and the main outcomes, and 76% describing the interventions in detail. Scores for internal validity were mixed: 52% of the interventions adhered to previously established protocols and 17% followed a blinding procedure. Where studies performed weakest was in selection bias and statistical power: In fewer than half of the studies, authors adjusted for confounding variables (such as baseline trauma scores or prior exposure) and only a third randomised their participants to intervention groups. Thirteen percent provided a statement about how sample size was determined to detect clinically important effects.
Outcomes

Broadly, in terms of the delivery, the included interventions fit into three main categories: Early intervention (41); preventative (2); and trauma therapy (7). The primary focus of this review is on the interventions that were delivered within the initial windows of opportunity, following traumatic exposure. Therefore, the review will henceforth focus on the studies that fit this description.

Trauma therapy: A number of studies that met our inclusion criteria described a one-on-one approach, more appropriately categorised as trauma therapy. However, in many cases, the samples were subthreshold for a diagnosis of PTSD. For example, Dickstein and colleagues (2013) measured responses to cognitive processing therapy (CPT) from military personnel with subthreshold PTSD compared to a full diagnosis, pre- and post-treatment. Most trauma therapies (12%) used CBT or trauma-focussed CBT, ten of which were trauma-focused, one that focused on increasing self-compassion, and one that primarily utilised imaginal exposure. Eighty-six percent of trauma therapies, in this review, had a positive effect on symptom severity whereas one had no effect.

Prevention: Other interventions were long-term in nature. For example, one recent intervention involved training participants in mindfulness and mantra techniques to promote recovery following exposure to trauma. In this study, Waelde and colleagues (2017) trained sixty-eight counsellors and psychologists, who had been a part of a recovery effort following a typhoon in the Philippines, to practice meditation. The format of the intervention consisted of an initial four-hour workshop followed a twelve-week programme of home-studying. The primary techniques involved being mindful of breathing rhythms, imagining how breath moves, repeating a breath-related mantra, and practicing to release negative thoughts, feelings, and experiences as they arise. The more minutes support workers spent practicing mindfulness, the lower their scores of depression. The training was also evaluated to be useful and credible as a post-disaster intervention. Both studies that fit within this category had a positive effect on symptom severity.

Early interventions: We looked at a broad range of outcomes in this review. Overall, over half (66%) of the included early interventions had a positive effect on PTSD symptom severity (two of the interventions (Belton, 2017; Grundligh et al., 2017) had an adverse effect), work-related outcomes (absences), or self-reported quality of life.

To further unpack these findings, we have evaluated the intervention models individually. Seventeen studies assessed the efficacy of CISD in supporting workers following a critical incident. In half of
those studies, CISD had a positive effect on some measures of PTSD symptom severity, whereas the other half showed there was no difference over control, and two where the intervention had an adverse effect. In almost all those studies (81%), participants felt that the intervention was still beneficial and helped them through recovery. For example, Carlier, Voerman, and Gersons (2000) examined the effects of CISD for police officers following a range of different critical incidents (from physical threats to responding to the murder of a child). At post-test, the authors found that there was no difference between the intervention and control group on any included measure of symptom severity or organisational indexes of impact, such as sickness absence. However, the officers who received debriefing expressed great satisfaction with the support provided by their constabulary and felt that it had helped them to recovery. In the review, five studies assessed the impact of TRiM. Three out of the five reported that the peer group debriefings led to significant reductions in risk assessment scores and trauma-related sickness absences. Whereas two studies (Greenberg et al., 2010; Jones, Burdett, Green, & Greenberg, 2017) found there was no difference between pre- and post-intervention scores on measures of trauma and anxiety.

Nineteen studies assessed the impact of non-specific “debriefing”—though the procedures involved and the specific focus of the intervention differed between studies (Table 2). In eleven (58%) of those, debriefing had positive gains for emergency responders. Tehrani and colleagues (2001) describe a group debriefing session that was delivered to employees following response to a nearby rail accident. The session began with a presentation about post-trauma stress, reassuring participants that their reactions to the incident were normal. The session also gave staff the opportunity to discuss and clarify details about the incident with one another. The researchers noted how the staff’s attitudes appeared to improve even during the debriefing, moving from regret at missed opportunities to appreciation of what they had achieved through their response. At a four-month follow up, there was a significant reduction in scores of post-traumatic stress, compared to pre-intervention. Of the remaining debriefings, six (32%) had no effect and two (11%) had an adverse effect on symptom severity. As was the case with CISD outcomes, many who attended a debriefing session expressed how it had been beneficial to them.
Table 1. Summary of included papers.

<table>
<thead>
<tr>
<th>Study citation</th>
<th>Design</th>
<th>Incident described</th>
<th>Sample</th>
<th>Occupation</th>
<th>Intervention</th>
<th>Outcome assessed</th>
<th>Results</th>
<th>Delivery details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adler et al. (2008)</td>
<td>1. 3 groups (CISD vs. SMC vs. SO); 2. Randomly allocated; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>952</td>
<td>Military personnel</td>
<td>CISD; SMC; SO</td>
<td>PCL; HR; POS; CES-D; CTS</td>
<td>At high levels of exposure, CISD was associated with decreases in PCL compared to SMC, $d = .12$; SMC was associated with slight increases, compared to SO, $d = .11$; SO and CISD did not differ at any level of exposure.</td>
<td>1. Multi-session; 2. Groups; 3. Day-trained instructors; 4. &quot;not tied to a specific discrete event&quot;.</td>
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<tr>
<td>Adler et al. (2009)</td>
<td>1. 3 groups (psychoeducation vs. debriefing vs. small Battlemind training vs. large Battlemind training); 2. Randomly allocated; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>2,297</td>
<td>Military personnel</td>
<td>debriefing</td>
<td>SUDS; PCL; PHQ</td>
<td>At follow-up, Battlemind training in large groups led to lower PHQ scores as compared to psychoeducation, $p = .05$; there was no significant difference between debriefing and small group training on any outcome, $ps &lt; .05$; there was no difference in group size of Battlemind training, $p &lt; .05$.</td>
<td>1. Multi-session; 2. Groups; 3. Research team; 4. 72-hours after exposure.</td>
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<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
<td>Sample</td>
<td>Occupation</td>
<td>Intervention</td>
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<td>Armstrong et al. (1998)</td>
<td>1. 2 groups (individual vs. group); 2. No randomisation; 3. Only post-data.</td>
<td>Earthquake</td>
<td>95</td>
<td>53 / 42</td>
<td>American Red Cross workers</td>
<td>MSD</td>
<td>Self-reported evaluations</td>
<td>There were no significant differences between individual compared to group debriefing, p &lt; .05; but allowing participants to have fuller discussions of their reactions and being able to share coping strategies with one another provided a better debriefing experience, p &lt; .0001.</td>
</tr>
<tr>
<td>Beaumont et al. (2016)</td>
<td>1. 2 groups (TF-CBT or TF-CBT + CFT); 2. Randomly allocated; 3. Pre- and post-data.</td>
<td>undisclosed</td>
<td>17</td>
<td>5/12</td>
<td>Fire Service Personnel</td>
<td>TF-CFT; CFT</td>
<td>HADS; IES; SCS</td>
<td>TF-CBT + CFT was more effective than TF-CBT alone at increasing self-compassion, p = .05; TF-CBT + CFT did not significantly differ from TF-CFT alone on HAS or IES, but trended in that direction.</td>
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<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
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<tr>
<td>Becker et al. (2009)</td>
<td>1. 6 groups; 2. Self-selection; 3. Post-data only.</td>
<td>Description of a shooting</td>
<td>379</td>
<td>Police officers</td>
<td>CISD; Exposure; CPT; EMDR; BEP; pharmacology</td>
<td>CS; PDS</td>
<td>Those meeting the PTSD criteria rated either exposure or CPT as their first or second choice for treatment; psychopharmacology was the least preferred choice, followed by EMDR and psychodynamic.</td>
<td>n/a</td>
</tr>
<tr>
<td>Belton (2017)</td>
<td>1. 2 groups (debriefing vs. assessment only); 2. No randomisation; 3. Post-data only.</td>
<td>Peacekeeping in a conflict zone</td>
<td>2,297</td>
<td>Military personnel</td>
<td>debriefing</td>
<td>PTSS; CES-D; DAS; NTDS.</td>
<td>Those who participated in debriefing had higher scores for PTSS (p&lt;.01), CES-D (p&lt;.05), and DAS (p&lt;.001) than those who did not. There was no difference in NTDS scores.</td>
<td>1. Multi-session; 2. Groups; 3. Mental health professionals; 4. 1-week after exposure.</td>
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<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
<td>Sample</td>
<td>Occupation</td>
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<td>Biggs et al. (2016)</td>
<td>1. 2 groups (PFA vs. assessment only); 2. Randomly allocated; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>126</td>
<td>Military personnel</td>
<td>PFA</td>
<td>PHQ; WHOQOL; CES; self-reported evaluations</td>
<td>The PFA intervention showed no overall effects on PCL, CES, or QOL (ps&gt;.05). In males, PTSD symptoms increased after baseline, while decreasing in the comparison group, p &lt;.05.</td>
<td>1. Multi-session; 2. Groups; 3. Mental health professionals; 4. 2-7 months after exposure.</td>
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<tr>
<td>Blacklock (2012)</td>
<td>1. 1 group (no control group); 2. No randomisation; 3. Post-data only.</td>
<td>Public suicide</td>
<td>43</td>
<td>Healthcare professionals</td>
<td>Adapted CISM; combined defusing and debriefing</td>
<td>IES</td>
<td>Following initial CISM session, all staff reported no further symptoms of intrusive thoughts or avoidant behaviours; 6 weeks later, 6 of 13 responders reported being sometimes affected by the incident and 7 said they were often affected.</td>
<td>1. Single-session; 2. Groups; 3. Mental health professionals; 4. 7-hours after exposure.</td>
</tr>
<tr>
<td>Study citation</td>
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<td>Incident described</td>
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<td>Brandt et al. (2009)</td>
<td>1. 1 group (no control group); 2. No randomisation; 3. Post-data only.</td>
<td>Air accident</td>
<td>252</td>
<td>Rescue workers</td>
<td>debriefing</td>
<td>Self-reported evaluations</td>
<td>Workers reported that sharing experiences in a debriefing group helped them &quot;move from distancing to integrating their inner experience with the outside world&quot;.</td>
<td>1. Single-session; 2. Groups; 3. Research team; 4. 1-week after exposure.</td>
</tr>
<tr>
<td>Carlier et al. (1998)</td>
<td>1. 2 groups (debriefed vs. assessment only); 2. No randomisation; 3. Post-data only.</td>
<td>Air accident</td>
<td>105</td>
<td>Police officers</td>
<td>debriefing</td>
<td>SI-PTSD</td>
<td>At 8 months, there was no difference in PTSD diagnosis (symptom or cluster level); At 18 months, officers who had been debriefed were significantly more likely to exhibit hyperarousal symptoms, p &lt; .05.</td>
<td>1. Multi-session; 2. Individual; 3. Mental health professionals and peers; 4. &quot;as soon as possible&quot;.</td>
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<tr>
<td>Study citation</td>
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<td>Carlier et al. (2000)</td>
<td>1. 3 groups (CISD vs. assessment only vs. external control group); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Varied in severity (from confrontation to child murder)</td>
<td>243</td>
<td>Police officers</td>
<td>CISD</td>
<td>SRS-PTSD; IES; PDEQ; ADIS</td>
<td>At post-test, there were no significant differences on any measure; no significant differences in sick leave or resumption; debriefed officers expressed greater satisfaction but there was no relationship between that and PTSD symptoms.</td>
<td>1. Multi-session; 2. Individual; 3. Peers; 4. 24-hours after exposure.</td>
</tr>
<tr>
<td>Chemtob et al. (1997)</td>
<td>1. 2 groups (staggered treatment); 2. Counter-balanced; 3. Pre- and post-data.</td>
<td>Natural disaster</td>
<td>43</td>
<td>Disaster relief workers</td>
<td>debriefing</td>
<td>IES</td>
<td>IES scores decreased over time in group 1 and, later, in group 2; following debriefing, scores on avoidance and intrusion reduced significantly , p &lt;.001.</td>
<td>1. Single session; 2. Group; 3. Research team; 4. 6-months after exposure.</td>
</tr>
<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
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<tr>
<td>Chongruk sa et al. (2012)</td>
<td>1. 2 groups (eclectic group counselling vs. psychoeducation only); 2. Random allocation; 3. Pre- and post-data.</td>
<td>Terror attack</td>
<td>42</td>
<td>undisclosed</td>
<td>Police officers</td>
<td>CBT; religious; art therapy; reality therapy</td>
<td>BDI; GHQ; SCL</td>
<td>Scores on BDI, GHQ, and SCL significantly reduced over time following post-eclectic group counselling, ps &lt; .05, whereas psychoeducation alone had no effect.</td>
</tr>
<tr>
<td>Chongruk sa et al. (2015)</td>
<td>1. 2 groups (eclectic group counselling vs. psychoeducation only); 2. Random allocation; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>44</td>
<td>undisclosed</td>
<td>Military personnel</td>
<td>CBT; religious; art therapy; reality therapy</td>
<td>RS; TMHI; GHQ</td>
<td>Scores on RS, TMHI, and GHQ significantly reduced over time following post-eclectic group counselling, ps &lt; .05, whereas psychoeducation alone had no effect.</td>
</tr>
<tr>
<td>Study citation</td>
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<td>Incident described</td>
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<tr>
<td>Cigrang et al. (2005)</td>
<td>1. 3 cases (no control group); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>3</td>
<td>Military personnel</td>
<td>exposure therapy</td>
<td>PCL</td>
<td>Each of the 3 soldiers showed reductions in PCL by an average of 56%, falling within sub-clinical ranges for PTSD; and by the end of the course, each reported feeling that they did not require any further treatment.</td>
<td>1. Multi-session; 2. Individual; 3. Mental health professional; 4. 24-hours after exposure.</td>
</tr>
<tr>
<td>Cigrang et al. (2017)</td>
<td>1. 2 groups (staggered treatment); 2. Random allocation; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>67</td>
<td>Military personnel</td>
<td>TF-CBT</td>
<td>PCL; PHQ; BHM; PSS</td>
<td>Patients in the initial treatment group improved significantly on all five outcome measures, p&lt; .05, with a clinically meaningful reduction (10 points or greater) in symptom severity on the PCL, compared to those in the delayed treatment group.</td>
<td>1. Multi-session; 2. Individual; 3. Mental health professional; 4. Undisclosed.</td>
</tr>
<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
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<td>Deahl et al. (1994)</td>
<td>1. 2 groups (debriefing vs. assessment only); 2. No randomisation; 3. Post-data only.</td>
<td>Peacekeeping in a conflict zone</td>
<td>62</td>
<td>Military personnel</td>
<td>Group debriefing</td>
<td>GHQ; IES; self-reported evaluations</td>
<td>There was no difference in scores between those debriefed and those simply assessed on the IES, p &gt; .20, or the GHQ, p &gt; .20; half of the debriefed participants evaluated the debriefing to be 'useful'.</td>
<td>1. Single-session; 2. Group; 3. Trained support workers; 4. &quot;as soon as possible&quot;.</td>
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<tr>
<td>Deahl et al. (2000)</td>
<td>1. 2 groups (CISD vs. assessment only); 2. Random allocation; 3. Post-data only.</td>
<td>Varied in severity (from artillery shelling to body handling duties)</td>
<td>106</td>
<td>Military personnel</td>
<td>CISD</td>
<td>HADS; IES; SCL; CAPS</td>
<td>Over time, HADS scores were significantly reduced in the debriefed group compared to the non-debriefed group, p = .008; however, following debriefing there was no change in IES or CAPS, and elevation in SCL scores.</td>
<td>1. Single-session; 2. Group; 3. Trained instructors; 4. &quot;immediately&quot; after exposure.</td>
</tr>
<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
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<td>Dickstein et al. (2013)</td>
<td>1. 2 groups (full vs. subthreshold PTSD); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>534</td>
<td>57 / 477</td>
<td>45.91</td>
<td>Military personnel</td>
<td>CPT</td>
<td>CAPS; PCL; BDI</td>
</tr>
<tr>
<td>Difede et al. (2007)</td>
<td>1. 2 groups (CBT vs. TAU); 2. Random allocation; 3. Pre- and post-data.</td>
<td>Terror attack</td>
<td>22</td>
<td>undisclosed</td>
<td>45.77, 7.72</td>
<td>Disaster relief workers</td>
<td>CBT-exposure</td>
<td>CAPS; PCL; BDI; SAS; MAST</td>
</tr>
<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
<td>Sample</td>
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<td>Drury et al. (2013)</td>
<td>1. 6 focus groups; 2. Delphi study.</td>
<td>Healthcare emergency</td>
<td>101</td>
<td>undisclosed</td>
<td>First responders</td>
<td>Psychoeducation</td>
<td>Self-reported evaluations</td>
<td>Participants agreed on stress emerging from responding to serious injuries; identified need for peer-support training to recognise and navigate stress following response to incidents; support from line managers (trauma informed or clinically trained).</td>
</tr>
<tr>
<td>Firing et al. (2015)</td>
<td>1. In depth interviews; 2. Analysed using Interpretive Phenomenological Analyses.</td>
<td>Terror attack</td>
<td>6</td>
<td>undisclosed</td>
<td>Search and rescue crew</td>
<td>Holistic debriefing</td>
<td>Self-reported evaluations</td>
<td>Participants commented on the importance of being able to normalise their feelings; to develop interpersonal relationships with their peers; to engage with their emotions on a deeper level; to comprehend the reasons for their individual reactions; to construct meaning.</td>
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<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
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<td>Frappell-Cooke et al. (2010)</td>
<td>1. 2 groups (experienced with TRiM vs. first use of TRiM); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>422</td>
<td>undisclosed</td>
<td>TRiM</td>
<td>GHQ; PCL</td>
<td>Those with experience of TRiM had lower GHQ scores than those using it for the first time, $p &lt; .01$; both groups had higher GHQ scores before and during deployment, compared to post-deployment; Greater access to sources of social support was associated with lower GHQ and PCL scores, ps &lt; .05.</td>
<td>1. Multi-session; 2. Group; 3. Peers; 4. 72-hours after exposure.</td>
</tr>
<tr>
<td>Greenberg et al. (2010)</td>
<td>1. 2 groups (TRiM vs. TAU); 2. Random allocation; 3. Pre- and post-data.</td>
<td>Varied in severity (significant injury to natural disasters)</td>
<td>1551</td>
<td>undisclosed</td>
<td>TRiM</td>
<td>GHQ; PCL; perceived stigma</td>
<td>There was no difference between TRiM and TAU in terms of pre- and post-GHQ or PCL scores, ps &gt; .05; there was also no effect of the intervention on internal or external stigma, ps &gt; .05.</td>
<td>1. Multi-session; 2. Group; 3. Peers; 4. 48-hours after exposure.</td>
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<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
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<td>Grundling h et al.</td>
<td>1. 2 groups (CISD vs. leisure); 2. Random allocation; 3. Pre- and post-data.</td>
<td>Interviews with victims of child abuse</td>
<td>53</td>
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<td>In both groups, SRQ remained unchanged over time; the CISD group (vs. control) had significantly higher IES and STS scores, p = .002; staff were less likely to report emotional distress when perceiving organisational support, p = .002.</td>
<td>1. Multi-session; 2. Group; 3. Mental health professional; 4. Undisclosed.</td>
</tr>
<tr>
<td>Gunasing am et al.</td>
<td>1. 2 groups (debriefing vs. assessment only); 2. Random allocation; 3. Pre- and post-data.</td>
<td>undisclosed</td>
<td>31</td>
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<td>MBI scores reduced post debriefing, whereas increased in the control group; the difference between groups was however not significant p = .83; in evaluations, 60% of participants suggested that they would recommend debriefing to peers and 90% found it to be a source of emotional and social support.</td>
<td>1. Multi-session; 2. Group; 3. Mental health professional; 4. 1-hour after exposure.</td>
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<tr>
<td>Study citation</td>
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<td>Halpern et al. (2009)</td>
<td>1. focus groups and one-to-one interviews.</td>
<td>undisclosed</td>
<td>100</td>
<td>Emergency Medical Technicians</td>
<td>debriefing</td>
<td>Self-reported evaluations</td>
<td>Participants highlighted the importance of: supervisor support and timeout within 24 h of the critical incident; perceived fear and stigma of appearing weak. Majority of participant wanted more education for themselves, their families and colleagues to recognise signs of critical incident stress.</td>
<td>n/a</td>
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<tr>
<td>Harris et al. (2011)</td>
<td>1. 2 groups (CISD vs. assessment only); 2. Random allocation; 3. Pre- and post-data.</td>
<td>undisclosed</td>
<td>660</td>
<td>Fire Service Personnel</td>
<td>CISD</td>
<td>PSSS; WAS; WOCQ; IES;</td>
<td>There was no significant differences between the two groups on PSSS, WAS, WOCQ, and IES scores; there was, however, an inverse relationship between negative affectivity and CISD, p &lt; .01; and a positive relationship between WAS scores and CISD, p &lt; .05.</td>
<td>1. Single-session; 2. Individual; 3. Research team; 4. 6-months after exposure.</td>
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<tr>
<td>Study citation</td>
<td>Design</td>
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<tr>
<td>Hunt et al. (2013)</td>
<td>1. 4 groups (TRiM, TRiM &amp; 1:1, 1:1, assessment only); 2. No randomisation; 3. Post-data only.</td>
<td>Murder-suicide</td>
<td>640</td>
<td>Police officers</td>
<td>TRiM</td>
<td>sickness absence</td>
<td>Risk assessment scores significantly reduced over time in the treated compared to untreated group, $p &lt; .001$; treatment (TRiM or TRiM + 1:1) was associated with a reduction in sickness absence, $p &lt; .001$.</td>
<td>1. Multi-session; 2. Group; 3. Manager; 4. 24-hours after exposure.</td>
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<tr>
<td>Hutton et al. (2010)</td>
<td>1. 2 groups (CISD vs. assessment only); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Unexpected death of patient</td>
<td>184</td>
<td>Healthcare professionals</td>
<td>CISD</td>
<td>Self-reported evaluations</td>
<td>Debriefed staff felt they managed their grief better than non-debriefed staff, $p = .003$; they also scored higher in their ability to maintain their professional integrity, compared to non-debriefed staff, $p = .005$; the vast majority of participants found the sessions helpful, informative, and helpful.</td>
<td>1. Single-session; 2. Group; 3. Trained instructor; 4. 1-week after exposure.</td>
</tr>
<tr>
<td>Study citation</td>
<td>Design</td>
<td>Incident described</td>
<td>Sample</td>
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<td>Intervention</td>
<td>Outcome assessed</td>
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<td>Jones et al. (2017)</td>
<td>1. 3 groups (TRiM vs. non-exposed non-TRiM vs. exposed non-TRiM); 2. Random allocation; 3. Pre- and post-data.</td>
<td>Varied in severity (from artillery shelling to body handling duties)</td>
<td>638</td>
<td>Military personnel</td>
<td>TRiM</td>
<td>GAD; PHQ; PCL; AUDIT; self-reported barriers to care</td>
<td>At follow-up, there was no difference between TRiM and non-TRiM groups on any mental health outcomes, ps &gt; .05; TRiM recipients were significantly more likely to seek professional help, p &lt; .05; TRiM recipients were more likely to report stigma than non-exposed, non-TRiM participants, p &lt; .01.</td>
<td>1. Multi-session; 2. Individual and group; 3. Peers; 4. 6-12 weeks after exposure.</td>
</tr>
<tr>
<td>Kenardy et al. (1996)</td>
<td>1. 2 groups (debriefing vs. assessment only); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Earthquake</td>
<td>195</td>
<td>Disaster relief workers</td>
<td>Stress debriefing</td>
<td>IES; GHQ; self-reported evaluations</td>
<td>Over a third of participants evaluated the debriefing to be &quot;somewhat helpful&quot;; those evaluations had no relation to scores on mental health outcomes; there was an overall decrease in IES scores over time but there was no significant difference between groups, on IES or GHQ, p &gt; .05.</td>
<td>1. Multi-session; 2. Group; 3. Mental health professional; 4. 2-years after exposure.</td>
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<td>Study citation</td>
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<tr>
<td>Leonard &amp; Alison (1999)</td>
<td>1. 2 groups (CISD vs. assessment only); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Shooting incidents</td>
<td>60</td>
<td>Police officers</td>
<td>CISD</td>
<td>Coping Scale; STAXI</td>
<td>There were no statistical differences between groups on coping, ( p = .34 ); the CISD group had higher scores on the active coping and positive reinterpretation subscales; the CISD group scored lower on STAXI compared to control, ( p = .017 ); the less satisfied an officer was with dept. support, the angrier they felt. At the 6 month follow-up, there was a trend towards less severe stress symptoms in the CISD group, ( p = .07 ); however on most measures (incl. sickness absence) there were no significant differences; after 2 years, 83% reported feeling &quot;back to normal&quot; but many of the staff were still affected by the incident even after receiving CISD.</td>
<td>1. Single-session; 2. Group; 3. Trained support workers; 4. 72-hours after exposure.</td>
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<tr>
<td>Macnab et al. (1998)</td>
<td>1. 2 groups (CISD vs. assessment only); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Air accident</td>
<td>39</td>
<td>Healthcare professionals</td>
<td>CISD</td>
<td>IES; GHQ; sickness absence; self-reports</td>
<td>At the 6 month follow-up, there was a trend towards less severe stress symptoms in the CISD group, ( p = .07 ); however on most measures (incl. sickness absence) there were no significant differences; after 2 years, 83% reported feeling &quot;back to normal&quot; but many of the staff were still affected by the incident even after receiving CISD.</td>
<td>1. Multi-session; 2. Group; 3. Trained support workers; 4. 24-48 hours after exposure.</td>
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<td>Study citation</td>
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<tr>
<td>Macnab et al. (2004)</td>
<td>1. 3 groups (mild vs. moderate vs. severe incidents); 2. No randomisation; 3. Post-data only.</td>
<td>Unexpected death of patient</td>
<td>12</td>
<td>undisclosed</td>
<td>Emergency Medical Technicians</td>
<td>SASRQ; LIS; SRE; IES</td>
<td>There was no correlation between the severity of the incident and scores on SASRQ, LIS, SRE, or IES; and there was no change in scores over time in any of the category groups.</td>
<td>1. Single-session; 2. Individual; 3. Trained support workers; 4. Undisclosed.</td>
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<td>Matthews (1998)</td>
<td>1. 3 groups (CISD vs. assessment only); 2. No randomisation; 3. Post-data only.</td>
<td>Assaulted by clients</td>
<td>63</td>
<td>49 / 14</td>
<td>Psychiatric workers</td>
<td>CISD</td>
<td>CISD group reported significantly higher levels of distress at time 1, compared to the control group, p = .01; In all groups, distress scores decreased over time, p &lt; .01; there was no difference between the CISD and control groups; the CISD group reported higher levels of work stress related to traumatic exposure compared to the control group, p = .02; the CISD group had significantly higher ratings on individual measures of PTSD symptoms; 57%</td>
<td>1. Single-session; 2. Group; 3. Trained support workers; 4. 1-week after exposure.</td>
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<td>Study citation</td>
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<td>Mitchell, Stevenson, and Poole (2000)</td>
<td>1. 1 group (no control); 2. No randomisation; 3. Post-data only.</td>
<td>Varied in severity (threats to person to sudden death)</td>
<td>612</td>
<td>Police officers</td>
<td>CISD</td>
<td>Self-reported evaluations</td>
<td>In the first 10 weeks since the incident, 20% reported no PTSD symptoms, compared to 6.8% who reported high occurrence; 11 weeks - a year, 21.6% none, 14.8% high; 56 weeks - 2 years later, 35% no, 10.8% high; 106 weeks - 5 years, 34% none, 5.1% high; 264 weeks - 10 years, 31.3% none, 4.3% high; 530 weeks to 30 years, 30.6%, none, 6.2% high; of those who had attended CISD before, 40% recalled it as positive; following CISD 71% described it</td>
<td>of those in CISD group felt that the debriefing helped reduce PTSD symptoms.</td>
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<tr>
<td>Robinson &amp; Mitchell (1993)</td>
<td>1. 2 groups (emergency responders vs. welfare staff); 2. No randomisation; 3. Post-data only.</td>
<td>Varied in severity (serious injury of colleague to child fatality)</td>
<td>172</td>
<td>Emergency Medical Technicians</td>
<td>debriefing</td>
<td>Self-reported evaluations</td>
<td>Both groups reported a reduction in the impact of the event following debriefing, p &lt; .001; emergency responders showed greater gains than hospital staff, p &lt; .004; all staff evaluated debriefing to be of considerable value to themselves and others; for emergency responders, the greater the impact, the more they valued the debriefing, p &lt; .05; 96% of responders vs. 77% of welfare staff experienced a reduction in stress symptoms</td>
<td>1. Single-sessions; 2. Group; 3. Peer; 4. 24-72 hours after exposure.</td>
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<td>67 / 105</td>
<td>undisclosed</td>
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<td>to be positive compared to only 2 as negative.</td>
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<th>N</th>
<th>f/m</th>
<th>Age (m, sd)</th>
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OFFICIAL
Palgi et al. (2012)  
1. 1 group (no control);  
2. No randomisation;  
3. Post-data only.  
Peacekeeping in a conflict zone  
Military personnel  
Group debriefing  
IES; Self-reported evaluations  
During ongoing conflict, there was a significant reduction in post-traumatic symptoms following debriefing, $p = .033$, $d = 1.18$; after a period of ceasefire followed by re-ignition of conflict, debriefing continued to reduce post-traumatic symptoms over time, $p = .028$, $d = 1.21$; across the entire period of conflict, post-traumatic symptoms decreased steadily following debriefing, $p = .017$.  
1. Multi-session;  
2. Group;  
3. Mental health professional;  
4. 1-week after exposure.
<table>
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<tr>
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<tr>
<td>Regehr &amp; Hill (2001)</td>
<td>1. 2 groups (debriefing vs. assessment only); 2. No randomisation; 3. Post-data only.</td>
<td>Varied in severity (violence to self to child fatality)</td>
<td>164</td>
<td>Fire Service Personnel</td>
<td>Group debriefing</td>
<td>BDI; IES; self-reported evaluations</td>
<td>80% indicated that they found the debriefing 'helpful'; those who attended debriefing had marginally higher scores on the intrusion subscale (IES) than those who did not, p = .07; there was no difference of debriefing vs. control on BDI scores, p = .27; there was no significant correlations between subjective perceptions of the efficacy of debriefing and IES or BDI scores.</td>
<td>1. Single-session; 2. Group; 3. Peer; 4. Undisclosed.</td>
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<td>Rick et al. (2006)</td>
<td>1. 4 groups (defusing vs. SPoT vs. formal counselling vs. assessment only); 2. No randomisation; 3. Post-data only.</td>
<td>Varied in severity (dog attack to armed robbery)</td>
<td>837</td>
<td>Royal Mail workers</td>
<td>debriefing</td>
<td>IES; GHQ; TSQ; physical/emotional functioning; social support</td>
<td>No significant differences were found between intervention and non-intervention groups on the IES or any subscale at follow-up; all groups showed significant health gains over time; those who received formal counselling had significantly higher rates of absences; compared to intervention.</td>
<td>1. Single-session; 2. Individual; 3. Manager; 4. 2-weeks after exposure.</td>
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<tr>
<td>Study citation</td>
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<tr>
<td>Ruck et al. (2013)</td>
<td>1. 2 groups (CISD vs. assessment only); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Varied in severity (physical assault to suicide)</td>
<td>91</td>
<td>undisclosed</td>
<td>undisclosed</td>
<td>Prison staff</td>
<td>CISD; IES; GAD</td>
<td>perceived organisational support was negatively correlated with absence rates, p&lt;.01; path analysis revealed that perceptions of organisational support influenced symptom levels at 3 months post trauma and, through that, absence levels 12 months post trauma.</td>
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</table>

At time 1, participants in the debrief group had significantly higher IES scores than in the control group, p<.01; IES scores reduced over time following debriefing, p<.001, whereas in the control group there was no difference, p>.05; descriptively, IES scores in the control group increased over time; there were no significant differences between the groups or time points on any of the GAD subscales; descriptively, GAD scores reduced. |

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<tr>
<td>Rudd et al. (2015)</td>
<td>1. 2 groups (CBT vs. TAU); 2. Random allocation; 3. Post-data only.</td>
<td>Peacekeeping in a conflict zone</td>
<td>152</td>
<td>19 / 133</td>
<td>27.4, 6.22</td>
<td>Military personnel</td>
<td>CBT SASI; BSSI; BDI; BAI; BHS; PCL</td>
<td>Soldiers who received brief CBT were approximately 60% less likely to make a suicide attempt than soldiers receiving TAU, p = .02; effects remained even after controlling for other risk factors (previous attempts, depression, stress, hopelessness, and suicidal ideation); those who previously attempted suicide, were also significantly less likely to try again following CBT, compared to TAU, p = .03; there were no between-group differences following debriefing but increased in the control group.</td>
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<tr>
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<td>Shalev et al. (1998)</td>
<td>1. 1 group (no control); 2. No randomisation; 3. Post-data only.</td>
<td>Peacekeeping in a conflict zone</td>
<td>39</td>
<td>undisclosed</td>
<td>Military personnel</td>
<td>Group debriefing</td>
<td>IES; STAI; PDEQ; PSS-F; SELF-C; EXP; CEV.</td>
<td>There was a significant reduction in STAI scores following debriefing, $p = .02$, an increase in SELF-C scores, $p = .001$; participants who expressed high levels of anxiety before debriefing normalised after it.</td>
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f/m

Age

(m, sd)

differences on secondary measures (BDI, BAI, BHS, PCL), $ps > .10$. 

Shalev et al. (1998) | 1. 1 group (no control); 2. No randomisation; 3. Post-data only. | Peacekeeping in a conflict zone | 39 | undisclosed | Military personnel | Group debriefing | IES; STAI; PDEQ; PSS-F; SELF-C; EXP; CEV. | There was a significant reduction in STAI scores following debriefing, $p = .02$, an increase in SELF-C scores, $p = .001$; participants who expressed high levels of anxiety before debriefing normalised after it. | 1. Single-session; 2. Group; 3. Mental health professional; 4. 48-72 hours after exposure. |
<table>
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<tr>
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<tr>
<td>Shoval-Zuckerman et al. (2015)</td>
<td>1. 2 groups (debriefing vs. assessment only); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Peacekeeping in a conflict zone</td>
<td>166</td>
<td>Military personnel</td>
<td>Stress debriefing</td>
<td>EXP; PCL; POAMS-TV; Self-rated Health; Anxiety and Defensiveness;</td>
<td>Participants in the control group reported more PTSD symptoms than in the debriefing group before and after the intervention, ( p &lt; .05 ); however there was no improvement following debriefing, while in the control group, symptoms increased significantly, ( p &lt; .01 ); following the intervention, debriefed participants were significantly better functioning than those in the control group, ( p &lt; .01 ).</td>
<td>1. Single-session; 2. Group; 3. Mental health professional and manager; 4. 3-months after exposure.</td>
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<tr>
<td>Tehrani et al. (2001)</td>
<td>1. 1 group (no control); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Rail accident</td>
<td>12</td>
<td>Supermarket employees</td>
<td>Group debriefing</td>
<td>IES; GAD</td>
<td>Four months after the group debriefing session, participants reported significant reductions in Avoidance, Arousal, and Re-experience, ( ps &lt; .001 ), and in Anxiety and Depression, ( p = .003 ) and ( p &lt; .001 ) respectively; indicators revealed that all employees demonstrated an</td>
<td>1. Single-session; 2. Group; 3. Research team; 4. 1-week after exposure.</td>
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<tr>
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<td>Tuckey &amp; Scott (2014)</td>
<td>1. 3 groups (CISD vs. psychoeducation vs. assessment only); 2. Randomly allocated; 3. Pre- and post-data.</td>
<td>Motor vehicle accidents</td>
<td>67</td>
<td>Fire Service Personnel</td>
<td>CISD</td>
<td>IES; K10; QoL; Alcohol consumption</td>
<td>There were no significant differences between intervention groups on IES, K10, or QoL, Fs &lt; 1; after controlling for pre-intervention scores, the intervention had no effect on post-intervention levels of IES or K10 scores; relative to assessment (but not psychoeducation), CISD was associated with less consumption one month following intervention; relative to psychoeducation (but not assessment), CISD was associated with less consumption one month following intervention;</td>
<td>1. Single-session; 2. Group; 3. Mental health professional and peer; 4. 72-hours after exposure.</td>
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<tr>
<td>Study citation</td>
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<tr>
<td>Waelde et al. (2017)</td>
<td>1. 1 group (no control); 2. No randomisation; 3. Pre- and post-data.</td>
<td>Natural disaster</td>
<td>68</td>
<td>Disaster mental health workers</td>
<td>Mindfulness</td>
<td>disaster exposure; SI-PTSD; anxiety; CES-D; STAI</td>
<td>More minutes of mindfulness practice was associated with lower depression severity at follow-up, ( p = .02 ); total minutes of practice was not a predictor of anxiety, ( p &gt; .05 ); not enough participants responded to the items about traumatic stress symptoms for them to be meaningfully analysed.</td>
<td>1. Multi-session; 2. Group; 3. Research team; 4. 12-weeks after exposure.</td>
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<tr>
<td>Wu et al. (2012)</td>
<td>1. 3 groups ('PIM' vs. CISD vs. assessment only); 2. Randomly allocated; 3. Post-data only.</td>
<td>Natural disaster</td>
<td>2,368 undisclosed</td>
<td>Military personnel</td>
<td>Group debriefing</td>
<td>SI-PTSD; HADS</td>
<td>Severity of PTSD decreased over time in all 3 groups, p &lt;.01; there was a main effect of group, p &lt;.01; but no interaction of time*group, p =.21; PTSD scores were not significantly different at 1 month follow-up, p =.25, but were significantly lower in the PIM group than in the other two at 2 months, p &lt;.01, and 4 months, p &lt;.01; no differences were found between CISD and assessment only, p &gt; .10; HADS scores decreased in all 3 groups over time, p &lt;.01.</td>
<td>1. Single-session; 2. Group; 3. Mental health professional; 4. 1-month after exposure.</td>
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<tr>
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<tr>
<td>Young &amp; Parr (2004)</td>
<td>1. 2 groups (CISD vs. assessment only); 2. No randomisation; 3. Post-data only.</td>
<td>Varied in severity (officer-involved shooting to terrorist event)</td>
<td>37 undisclosed undisclosed</td>
<td>Police officers</td>
<td>CISD</td>
<td>BDI; IES;</td>
<td>There was no significant difference between CISD vs control on BDI, but findings trended towards improvement following CISD, $p=.104$; there were also no treatment effects on Avoidance or Intrusion subscales of the IES, $ps&gt;.10$, but scores trended in favour of CISD; in the CISD condition, discussing job-related stressors appeared to benefit the officers by building &quot;a sense of group cohesion&quot;.</td>
<td>1. Multi-session; 2. Group; 3. Peer; 4. Undisclosed.</td>
</tr>
</tbody>
</table>

Note: Effect sizes are reported where available. The column titled 'Delivery' refers to how the intervention was delivered in terms of: 1. The number of sessions used; 2. The format; 3. The identity of the facilitator; and 4. The length of time since traumatic exposure.
<table>
<thead>
<tr>
<th>Study citation</th>
<th>Details of intervention</th>
<th>Quality appraisal score (%)</th>
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<tbody>
<tr>
<td>Adler et al.</td>
<td>47-148 minute class led by trained peer instructor. Stress Management Class is comparable to stress education classes conducted by trained peers and adapted for use in a deployed environment. The course aims to introduce the concept of stress; define major and minor stressors; provide examples of deployment-related stressors; review symptoms associated with stress; identify potential long-term effects of stress on individuals; and describe adaptive coping strategies for reducing the effects of stress.</td>
<td>62.96</td>
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<tr>
<td>(2008)</td>
<td></td>
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<tr>
<td>Adler et al.</td>
<td>7-day programme of group debriefings led by formally trained instructors. Battlemind training takes a cognitive and skills-based approach to educating military personnel about post-deployment transition; emphasizes safety, relationships, and common physical, social and psychological reactions to combat; positively reframes traditional post-deployment transition difficulties such as PTSD, depression, and sleep problems as being a natural consequence of having developed effective occupational coping skills related to combat.</td>
<td>77.78</td>
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<tr>
<td>(2009)</td>
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<tr>
<td>Armstrong et</td>
<td>35-minute session conducted either one-on-one or in groups. Multiple Stress Debriefing is designed to provide services to personnel who experienced more than one incident. The aims are to encourage disclosure by participants of troubling events they experienced during the disaster relief effort; facilitate expression of associated thoughts and feelings about the troubling events; encourage discussion and the use of effective coping strategies, as well as educating participants about typical stress reactions; facilitate discussion of positive or meaningful accomplishments during the disaster relief effort while preparing participants for the transition back to their home environment.</td>
<td>33.33</td>
</tr>
<tr>
<td>et al. (1998)</td>
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<tr>
<td>Beaumont et al. (2016)</td>
<td>12-week programme consisting of group sessions, lasting 60-90 minutes, led by a mental health professional. Compassion-focused therapy aims to help individuals learn to respond to self-criticism by accessing the contentment/self-soothing system; to cultivate a compassionate mind and learn to develop understanding for the suffering they feel; to develop compassionate attributes which include, being motivated to care for and alleviate distress (care for well-being), having a sensitivity to distress, responding to suffering with empathy, to tolerate difficult emotions (distress tolerance) and responding to distress with non-judgement.</td>
<td>51.85</td>
</tr>
<tr>
<td>Becker et al. (2009)</td>
<td>9–12 session individual therapy led by a mental health professional. Exposure therapy aims to educate about common reactions to trauma; retrain breathing (relaxation training); prolong (repeated) exposure to trauma memories; repeat in vivo (i.e., real life) exposure to situations that you are avoiding due to trauma-related fear; encourage confronting the traumatic memory by repeatedly telling the story to the therapist and challenging things that are avoided (i.e., driving a car, walking home at night). You will be assigned homework to encourage you to practice in life the things you learn in therapy.</td>
<td>37.04</td>
</tr>
<tr>
<td>Belton (2017)</td>
<td>7-day programme of mandatory briefings on a variety of topics such as safety, post-deployment finances, and equal opportunity rights, as well as medical screenings group sessions led by a trained peer instructor. The debriefing model included a strong narrative element of reconstructing the story of the event(s), encouraging good mental and physical health, well-being, work satisfaction, and enjoyment of life, both during active duty military service and continuing after military service.</td>
<td>62.96</td>
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<tr>
<td>Biggs et al. (2016)</td>
<td>2-hour group session led by a mental health professional. The intervention was based on the principles of Psychological First Aid the aims for which were to reduce distress and facilitate adaptation by promoting five principles: (a) safety (physical and psychological), (b) calming, (c) connectedness, (d) self-efficacy, and (e) hope/optimism.</td>
<td>55.56</td>
</tr>
<tr>
<td>Blacklock (2012)</td>
<td>90-minute group defusing/debriefing session led by trained peer instructors. The intervention’s aims were to invited staff to describe their role in the incident; to describe the thoughts they experienced; gently move from a cognitive to emotional level by thinking about the worst aspects of the incident; move back to a more cognitive level by describing the physical symptoms during and after the incident; emphasize the normality of dealing with an abnormal event; teach strategies for dealing with stress; provide details of additional support services.</td>
<td>40.74</td>
</tr>
<tr>
<td>Brandt et al. (1995)</td>
<td>A multi session group-oriented debrief. The aim of the intervention was for participants to share their experiences of a common trauma.</td>
<td>25.93</td>
</tr>
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<td>Carlier et al. (1998)</td>
<td>A 60-minute group based debrief led by trained peer instructors and mental health professionals. The aims of the intervention were to (1) introduce the ground rules; (2) establish what happened; (3) discuss thoughts about what happened; (4) discuss emotions associated with the event; (5) identify signs and symptoms of distress; (6) emphasize normality and furnish information about useful coping strategies and about the post-traumatic stress syndrome in general; and (7) discuss any remaining issues, to summarize and to provide any additional services.</td>
<td>55.56</td>
</tr>
<tr>
<td>Carlier et al. (2000)</td>
<td>A multi-session one-on-one debrief, averaging 74-minutes in total, led by trained peer instructors. Based on the principles of CISD, this intervention was adapted for use with individual trauma victims. The debriefer applied a seven-stage, semi-structured procedure, comprising: an introduction; facts; thoughts and impressions; emotional reactions; normalization and traumatic stress education; planning for the future; and disengagement. The debriefing itself focused solely on the critical incident and its effects, and it was supplemented by written documentation that explained common reactions to traumatic events; suggested strategies to deal with such reactions; and gave contact details if further immediate help was required.</td>
<td>51.85</td>
</tr>
<tr>
<td>Chemtob et al. (1997)</td>
<td>A 3-hour group debriefing (followed by 2-hour lecture) led by a trained instructor. The aim of the intervention was to achieve three goals of normalization, education, and psychological support. Participants were then invited to share with the group their experiences. The immediacy and intensity of experiences made sharing reactions easy. The facilitator invited a description of the experience touching on its cognitive, affective, and behavioural components. Description of the most terrifying moments was also invited. The facilitator encouraged and acknowledged the intensity of the experience and emphasized the universality of reactions and the fact of competent survival. Perceived failure was reframed as something to be expected in a disaster.</td>
<td>37.04</td>
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<tr>
<td>Chongruks a et al. (2012)</td>
<td>3-month group intervention, each session lasting 1.5-2 hours, led by a trained research team. The intervention comprises 8 sessions that aim to: 1) educate about mental health, instruct on deep breathing exercises; 2) foster trust; exchange stories of distress; 3) encourage discussion about anxiety; 4) monitor anxieties and challenge dysfunctional thoughts; 5) exchange stories of anger and modify angry thoughts and perceptions; 6) encourage disclosure of feelings of guilt and sadness; to reflect upon impermanence and practice mindfulness; 7) brainstorm ways to achieve thought stopping; 8) review and summarise ideas; 9) share stories of achievement; 10) make plans to achieve unmet goals; 11) and 12) exchange stories of enacting plans, evaluate current behaviour and encourage commitment.</td>
<td>66.67</td>
</tr>
<tr>
<td>Chongruks a et al. (2015)</td>
<td>2-day programme of group therapies, each session lasting 50 minutes to 1.5-hours, led by a trained research team. The intervention consisted of 3 phases, the first was intended to help members understand the groups’ goals, leaders’ and members’ roles, to build relationship and trust, to understand information on mental health and resilience, to begin building their philosophy of living and to teach team work, to self-disclose and to practice breathing. The second phase aimed at increasing resilience and mental health, exchanging experiences of deployment, discussing hardship, finding meaning in their careers, sharing life goals and learning approaches to optimism. The third phase was to continue to increase resilience and mental health, encourage members to believe in themselves, increase their self-esteem and become more aware of positive, negative and neutral thoughts.</td>
<td>70.37</td>
</tr>
<tr>
<td>Cigrang et al. (2005)</td>
<td>5-week programme of individual debriefing sessions, lasting around 90-minutes each, led by a mental health professional. The intervention included 4 sessions of exposure therapy in which the primary focus was prolonged imaginal exposure to the traumatic event. Individuals described the incident step-by-step in concrete detail; the setting prior to the event; what they saw; what they were wearing; smells, aromas...etc; to speak aloud anything they said. The instructors then reassured participants that it was not uncommon for people to become upset during the exposure or feel similar to how they felt during the incident itself. They were encouraged to not be embarrassed by their reactions but see them as normal responses to an abnormal event. Brief cognitive therapy was included in the session to provide strategies to reframe negative or intrusive thoughts.</td>
<td>22.22</td>
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<tr>
<td>Cigrang et al. (2017)</td>
<td>4-6 week programme of individual therapy sessions led by a mental health professional. The BHC educated the patient about factors that contribute to the development and maintenance of PTSD symptoms, with an emphasis on the role of avoidance. The appointment concluded with the BHC presenting PTSD treatment options, which included (a) meeting with the BHC in primary care for four 30-min appointments; (b) referral to the specialty mental health clinic for more intensive, evidence-based psychotherapy for PTSD; and (c) addressing the symptoms using self-help resources only.</td>
<td>70.37</td>
</tr>
<tr>
<td>Deahl et al. (1994)</td>
<td>1-day session of psychological debriefing led by welfare professionals (chaplains, psychologist, psychiatrists or social workers). The intervention included an educational component, in which the symptoms of post-traumatic stress were explained as a normal human reaction to abnormal stress, a small group debriefing session with two welfare professionals, using the Dyregov (1989) model, and formal advice on where to get help, if required. The emphasis was on the frequency and normality of any disturbing symptoms, in an attempt to destigmatise and facilitate help-seeking.</td>
<td>37.04</td>
</tr>
<tr>
<td>Deahl et al. (2000)</td>
<td>2-hour debriefing session led by a trained researcher. The intervention follows the principles of the Dyregov and Mitchell model, seeking to promote emotional processing and ventilation by encouraging the recollection and reworking of the traumatic event.</td>
<td>74.07</td>
</tr>
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<td>Study citation</td>
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<tr>
<td>Dickstein et al. (2013)</td>
<td>12-part programme of 50-60 minute, one-on-one sessions led by a mental health professional. The primary focus of the intervention is to re-frame negative thoughts after being exposed to a traumatic event. The first phase consists of psychoeducation, outlining the cognitive theory of PTSD development; the next phase involves formal processing of the incident; to modify cognitive distortions. The final phase focuses on reinforcing skills that participants learn to further identify, evaluate, and modify beliefs concerning trauma. Additional sessions could be added at the end of therapy, as needed, to address remaining symptoms.</td>
<td>62.96</td>
</tr>
<tr>
<td>Difede et al. (2007)</td>
<td>12 CBT sessions, lasting 75-minutes each, led by a mental health professional. The intervention included: (a) psychoeducation; (b) treatment rationale and contracting; (c) breathing exercises; (d) imaginal exposure; (e) gradual in vivo exposure; (f) cognitive reprocessing; (g) relapse prevention; and (h) homework (imaginal exposure using audiotaped imaginal exposure from treatment sessions, graduated in vivo exposure, and cognitive reprocessing). Patients were instructed to do their homework daily. Twelve 75-minute sessions were held weekly. Imaginal exposure was begun in the second session with a target of 30 minutes per session and continued through the 11th session.</td>
<td>92.59</td>
</tr>
<tr>
<td>Drury et al. (2013)</td>
<td>Participants expressed strong desire to learn how to recognise stress in themselves and in their colleagues; sought guidance on helping colleagues who are stressed; peer support programmes; training in listening skills and a number of other simple psychosocial techniques for peer supporters.</td>
<td>37.04</td>
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<tr>
<td>Firing et al.</td>
<td>1-2 hour interview led by a trained researcher. This consisted of three main sections: Stage 1, getting the informants to describe their experience of the incident. Stage 2, the main part of the interview guide consisted of questions exploring the team's experience of the debriefing process. The researcher was flexible about changing the order of questions and probed areas that arose in order to follow the participants’ perspectives. Stage 3, using sufficient time in bringing the interview to an end. This was important as it helped to maintain the trustful climate between the informant and the researcher. Holistic Debriefing benefits from traditional debriefing, the “after action review,” and from psychological debriefing, by explicitly addressing and including emotional aspects.</td>
<td>44.44</td>
</tr>
<tr>
<td>Frappell-Cooke et al.</td>
<td>A single-session group debrief, led by trained peer supporters. The aim of the intervention was to provide: basic psychoeducation; appropriate feedback and support following traumatic exposure; recognition of psychological illness; understanding and acceptance of stress reactions within an appropriate environment.</td>
<td>51.85</td>
</tr>
<tr>
<td>Greenberg et al.</td>
<td>1-2 day peer-delivered psychological support process, which aims to ensure that those who develop psychological disorders as a result of being exposed to traumatic events, are assisted to seek help.</td>
<td>59.26</td>
</tr>
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<tr>
<td>Grundlingh et al. (2017)</td>
<td>90-120 minute group debriefings led by a mental health professional. The intervention involved story-telling, identifying emotional responses to these stories, psycho-education and practical information to normalise group member reactions to a distressing event. Session 1 focused on encouraging group participation, discussing primary trauma encountered and emotional reactions to these stories. Session 2 connected current experiences with the group members’ own trauma histories and life experiences. The last session focussed on societal and community responses to violence, and employing personal agency to find constructive ways to address violence in communities.</td>
<td>81.48</td>
</tr>
<tr>
<td>Gunasingham et al. (2015)</td>
<td>1-day, multi-phase group debrief led by a senior mental health professional. Each session started with the facilitator asking each participant how the previous fortnight had been and then allowing the topics for discussion to emerge generically from their concerns and experiences. Facilitators had topics of themes to raise if no participant had anything to say. Facilitators kept a log of the themes covered.</td>
<td>74.07</td>
</tr>
<tr>
<td>Halpern et al. (2009)</td>
<td>1-2 hour debrief led by peer supporters. The intervention focuses on providing emotional support by the supervisor, which consists of: acknowledgment of the incident as critical, valuing the work done by the emergency responder; showing concern about the well-being of the emergency responder, willingness to listen and to offer material help. The intervention also ensures availability of a brief (often just 1/2–1 h, rarely more than a few hours) timeout period, usually spent in what appears to be casual conversation with peers, but which serves to decrease emotional hyperarousal and allows for self-titrated release of emotion, in the context of a comfortable, understanding environment.</td>
<td>40.74</td>
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<tr>
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<tr>
<td>Harris et al. (2011)</td>
<td>A 1-hour group debrief led by an experienced researcher. The intervention followed the structure of CISD, providing psychoeducation on various stress reactions following exposure to a critical incident. The seven phases of CISD are labelled as follows: (a) introduction, (b) fact, (c) thought, (d) reaction, (e) symptoms, (f) teaching, and (g) re-entry to the workplace.</td>
<td>59.26</td>
</tr>
<tr>
<td>Hunt et al. (2013)</td>
<td>A single-session, one-on-one interview and debriefing led by a trained peer supporter. The briefings aimed to provide high-quality information about potential psychological trauma responses and self-management. Following a structured psychological risk assessment, those considered at heightened risk of developing trauma-related mental health problems are signposted to self-refer to appropriate help sources.</td>
<td>66.67</td>
</tr>
<tr>
<td>Hutton et al. (2010)</td>
<td>A 1-3 hour, group debrief based on the principles of CISD led by a trained instructor. Bereavement debriefing sessions focus on the emotional response of health care professionals, often in the wider context of a relationship with the patient and not simply the death event itself. The intervention follows the structure of 1) Welcoming and introducing the sessions; 2) reviewing facts of the incident; 3) reviewing the patient case; 4) eliciting responses to the incident; 5) discussing the emerging emotions; 6) discussing coping strategies for grief; 7) discussing lessons learned; and 8) concluding the session, acknowledging the care and support available for staff and families.</td>
<td>37.04</td>
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<tr>
<td>Jones et al. (2017)</td>
<td>A multi-session, one-on-one structured interview, followed by small group debriefing led by a trained practitioner. The intervention follows a structure of: 1) Carrying out effective psychological management at the site of a traumatic event; 2) Convening and conducting a meeting with key unit managers to plan a response; 3) Analysing traumatic events and allocating personnel to group or individual risk assessment; 4) Conducting a risk-assessment interview; 5) Conducting a briefing meeting; 6) Facilitating a timely referral to an appropriate agency for treatment.</td>
<td>55.56</td>
</tr>
<tr>
<td>Kenardy et al. (1996)</td>
<td>A 3-5 hour group debriefing led by a mental health professional. The intervention followed the 7 phases of CISD: introductory phase (rules and process explained); fact phase (what they saw, heard, smelled, touched and did); thoughts phase (first thoughts); feelings phase (emotional reactions); assessment phase (physical or psychological symptoms); education phase (stress response syndrome); and re-entry phase (referral information).</td>
<td>40.74</td>
</tr>
<tr>
<td>Leonard &amp; Alison (1999)</td>
<td>A 30 minute group debrief led by a mental health professional and peer supporters. The intervention followed the 7-phase process of CISD. Throughout each section individuals are, first, encouraged to ventilate strong feelings aroused by the incident. Second, each police officer is then reassured that such strong feelings are perfectly normal. Third, the person is cautioned that some symptoms have a delayed occurrence. Finally, attempts are made to help the person to assimilate the experience and see it in context.</td>
<td>62.96</td>
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<tr>
<td>Macnab et al. (1998)</td>
<td>A 3-4 hour group debrief led by a trained instructor and assisted by critical incident stress management staff. Following the principles of CISD, the intervention aimed to provide information concerning the symptoms of critical stress reactions and strategies for coping with them. The sessions allowed participants to relate their involvement in and their reactions to the event to each other, and to hear the perspectives of others.</td>
<td>44.44</td>
</tr>
<tr>
<td>Macnab et al. (2004)</td>
<td>A 15-45 minute, one-on-one debrief which included immediate debriefing (at the scene), initial defusing (within hours), formal debriefing (within days), and follow-up debriefing. The intervention ranged from &quot;mild&quot; to &quot;severe&quot;, depending on a severity scoring system. Mild intervention was a &quot;listening ear&quot; over the telephone and direction to a pamphlet describing the symptoms of the critical incident stress (pamphlets were sent to all stations). A moderate intervention was a &quot;listening ear&quot; immediately, direction to the pamphlet, and referral to a critical-incident stress coordinator for debriefing. A severe intervention was relevant only if more than one person involved in an event experienced CIS. A severe intervention consisted of defusing and subsequent debriefing with a critical incident stress coordinator.</td>
<td>37.04</td>
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<tr>
<td>Matthews (1998)</td>
<td>A single-session group debrief led by a qualified support worker. A key component of the debriefing process was the emphasis on restoration of the individual's coping skills and promotion of a sense of control after the event. Participants also co-developed a cognitive-psychological framework from which an understanding of their reactions and the recovery process could be gained. Participants were encouraged to discuss facts of the event, clarify questions, and explore thoughts, feelings, and coping strategies.</td>
<td>51.85</td>
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<tr>
<td>Mitchell, Stevenson,</td>
<td>A 1-3 hour one-on-one or small group debriefing led by a trained instructor. The intervention took the form of a structured group discussion with facilitators and the individuals who were involved in the incident. The aim was to review the facts, thoughts, impressions and reactions following a critical incident; to provide information on normal reactions to abnormal events; and to identify those persons who may require more intensive psychological support.</td>
<td>40.74</td>
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<td>and Poole (2000)</td>
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<td>Robinson &amp; Mitchell</td>
<td>2-3 hour group debrief led by trained peers. The intervention follows the principles of CISD, providing the opportunity for a discussion about an incident, or series of incidents, with focus on how personnel have managed and currently are coping. Through a confidential and supportive environment, members are able to discuss issues of concern to them and to support others in the group.</td>
<td>40.74</td>
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<td>(1993)</td>
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<tr>
<td>Palgi et al.</td>
<td>A multi-session, group debrief led by mental health professional. The approach emphasizes jumping narratively between the past and the future in order to treat the trauma in the present. More specifically, the model is based on the memory’s plasticity, first shifting the traumatic event back into a continuation of an individual’s past narrative about the occurrence, and then integrating it with a narrative of the future. This is done without making the substantive core of the experience of the traumatic event—called the “traumatic nucleus”—the major focus of treatment, as is done in mainstream, exposure-oriented models of treatment.</td>
<td>48.15</td>
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<td>(2012)</td>
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<tr>
<td>Regehr &amp; Hill (2001)</td>
<td>A single-session group debrief led by a trained peer instructor. The first stage is to review the event. This includes describing the sights, sounds and smells associated with the event, discussing each individual's involvement and the final outcome. Next, people are invited to discuss their reactions to the event including the emotional and behavioural consequences both for themselves and their family life. Following this, the group leader provides educational information designed to normalize reactions and reinforce coping skills. As the session draws to a conclusion, participants are invited to discuss their accomplishments and reinforce one another's efforts. Finally, participants are encouraged to provide mutual aid as required and opportunities for professional follow-up are presented.</td>
<td>29.63</td>
</tr>
<tr>
<td>Rick et al. (2006)</td>
<td>90-minute one-on-one debrief led by a trained peer supporter. The debrief itself involved participants giving their account of the traumatic incident, looking at the facts of the incident and any thoughts and feelings associated with the incident. The final phase of the debrief is the provision of information. The information includes outlining normal reactions to trauma, providing some guidance and simple hints on how to reduce or prevent traumatic reactions, followed by a closing stage during which any remaining questions are answered.</td>
<td>48.15</td>
</tr>
<tr>
<td>Ruck et al. (2013)</td>
<td>2-3 hour group debrief led by a trained peer instructor. The intervention followed the principles of CISD including introductions (roles within incident), facts (details of incident), thoughts (during incident), feelings (emotions and sensations during incident), reactions (since incident to present), planning (future issues, e.g. inquiries, investigations) and closure.</td>
<td>55.56</td>
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<td>Rudd et al. (2015)</td>
<td>12-week programme of 90-minute, one-on-one psychotherapy sessions led by a mental health professional. The intervention consisted of 3 phases: 1) A detailed assessment of the participant’s most recent suicidal episode or suicide attempt; 2) application of strategies to reduce beliefs or assumptions that serve as vulnerabilities to suicidal behaviour (guilt and shame); 3) a relapse prevention task wherein participants imagined the circumstances of a previous episode and the internal experiences associated. Then participants imagined themselves using one or more of the skills learned in CBT to resolve the crisis.</td>
<td>96.30</td>
</tr>
<tr>
<td>Shalev et al. (1998)</td>
<td>2.5-hour group debrief led by a mental health professional. Debriefing sessions were conducted immediately after combat, in the presence of all the survivors. The group's task was defined as &quot;describing the combat with all the possible details.&quot; Military ranks were set aside during the session, and testimonies were weighed according to their pertinence to understanding the course of the operation. The reconstruction of the battle followed a &quot;strict chronological path&quot; and uncovered the events in sequential order. Information on each stage of the action was exhaustively collected from all witnesses. Importantly, soldiers’ thoughts, assumptions, and feelings and the resulting decisions were considered to be an important part of the factual reality of combat.</td>
<td>51.85</td>
</tr>
<tr>
<td>Shoval-Zuckerman et al. (2015)</td>
<td>A 6-hour group debrief led by a mental health professional. The intervention consisted of three parts: In the first part, the soldiers reviewed the sequence of events that occurred from the time of their release from army reserve duty until the present. In the second part, they articulated their thoughts and feelings at the present time. They were given an opportunity to relate to the losses they had experienced in the war, and they were able to express feelings of guilt and anger. In the third part, the soldiers discussed their ability to continue functioning as individuals and as a group. The discussion focused on the need to continue living, and the expectation that participation in the group would enable them to resume regular functioning. Emphasis was placed on the strength of the group and the positive coping mechanisms used.</td>
<td>70.37</td>
</tr>
<tr>
<td>Study citation</td>
<td>Details of intervention</td>
<td>Quality appraisal score (%)</td>
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<tr>
<td>Tehrani et al. (2001)</td>
<td>1-day group debrief led by trained instructors. The debriefing went through the employees’ experiences of the incident in great detail, focusing on their behaviours and the things that were seen, heard, smelled, touched and tasted. The debriefing allowed the employees to examine what had happened during the day of the crash, to fill gaps in the story, check understanding and share knowledge. Of particular significance were the changes in attitude that occurred during the debriefing. At the beginning of the debriefing, the participants talked about those things that they would have liked to have done but did not do. At the end of the debriefing, colleagues were recognizing the positive things that they had achieved individually and as a group. This process allowed for the group to create a shared understanding of what had happened.</td>
<td>51.85</td>
</tr>
<tr>
<td>Tuckey &amp; Scott (2014)</td>
<td>90-minute group debrief led by a mental health professional. The intervention followed the seven-phase protocol of CISD: (1) Introduction, (2) Facts, (3) Thoughts, (4) Reactions, (5) Symptoms, (6) Education, and (7) Re-entry. Sessions were led by a consultant mental health professional. A peer supporter also attended and led the introduction and education phases.</td>
<td>81.48</td>
</tr>
<tr>
<td>Waelde et al. (2017)</td>
<td>4-hour group workshop led by a trained instructor. The standard implementation is an 8-week group-based manualized and secularized mindfulness meditation and mantra intervention with a booster session after 12 weeks. This standard format was modified for the disaster context to include an initial workshop and home study program. The workshop included instruction and guided practice in the mindfulness techniques such as encouraging participants to notice their breathing as often as possible, particularly during stressful moments. It also provided information about how to teach the practices to disaster survivors. The home program used a manual which provided week-by-week guidance designed to promote learning and daily practice.</td>
<td>66.67</td>
</tr>
<tr>
<td>Study citation</td>
<td>Details of intervention</td>
<td>Quality appraisal score (%)</td>
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<tr>
<td>Wu et al. (2012)</td>
<td>2-hour group debrief led by a mental health professional. The intervention followed the principles of CISD including introductions (roles within incident), facts (details of incident), thoughts (during incident), feelings (emotions and sensations during incident), reactions (since incident to present), planning (future issues, e.g. inquiries, investigations) and closure. The greatest difference between “512 PIM” and CISD is the 5th stage which focused on cohesion training, for example participants were instructed to play games which need team cooperation, participants were asked to tell in private or shout in public the words they most want to say.</td>
<td>77.78</td>
</tr>
<tr>
<td>Young &amp; Parr (2004)</td>
<td>A 60-minute group debrief led by a trained peer supporter. Each meeting began with the question, “What has been the most stressful or difficult part of being a police officer this week?” Each time, we went around the circle, and each officer participated in some way. At the end of each meeting, the researcher taught methods for coping with and understanding the types of stress discussed during the meeting. General information about stress and coping was also presented. In a number of group meetings, teaching occurred from officer to officer, sometimes about decision making and coping, other times about how decisions or problems had been faced by others. This interaction seemed especially effective and helpful and also built a sense of group cohesion.</td>
<td>44.44</td>
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</table>
Meta-ethnography

Five key concepts were identified: Adherence; organisational context; governance; social support; and perceived benefits. Four second-order interpretations were identified, on the basis of which three third-order interpretations (based on the key concepts and second-order interpretations) were constructed. These were all linked together in a line of argument that accounts for how well an early intervention mitigates PTSD symptom severity in emergency responders following exposure to trauma (Table 3). For a full account of the meta-ethnography results see Appendix B.

Adherence: The studies can be separated into those that adhere to previously outlined protocols and those that have been modified. Of the interventions that adhered to established protocol (27%), fewer than half (43%) had a positive effect on symptom severity. Whereas of those that were described to have been catered to the needs of emergency responders, 65% reported positive gains. The most common deviations were in the timing of delivery. For example, Blacklock (2012) describes the delivery of a CISD to healthcare professionals following a suicide on hospital grounds. Rather than targeting two windows of opportunity for trauma management (as identified by the original authors; Mitchell, 1983), the researchers co-joined defusing (recommended for the first 24-hours) and formal debriefing (recommended for the first 72-hours) into a single session.

Organisational context: While the original authors urge providers to adhere to well-published and internationally accepted standards of practice (Mitchell & Everly, 1996), practitioners who deploy intervention models highlight that one size does not fit all and some organisations have a “distinctive organisational culture” (Frappell-Cooke et al., 2010, p. 646). The requirement to adjust models stems from several challenges specific to emergency response, varying from logistical to cultural. For example, the routine workday for medical and nursing staff consists of long hours, tough clinical decision making, and general fatigue. Thus, modifying existing intervention models by reducing them into a single session helps to “capture the maximum amount of staff”, who might otherwise be forced to ignore or leave posttraumatic stress unattended (Blacklock, 2012, p. 4). In the military, soldiers live and work in an unpredictable environment often transferring between units, being deployed overseas, and being separated from their ordinary support networks. Therefore, the success of implementing an effective programme support in military populations depends on the flexibility and duration of the model (Rudd et al., 2015).

In several the constituent studies, emergency response staff cited a culture of stigma in their organisation was one of the most significant barriers to help-seeking and recovery. Emergency medical technicians reported feeling that their organisation stigmatises emotional vulnerability (Halpern, Gurevich, Schwartz, Brazeau, 2009). During a CISD, a number of healthcare professionals listed loss of professional integrity and impact to career prospects as factors preventing them from
seeking support after the traumatic loss of a patient (Hutton, Hall, & Rushton, 2010). The perspective from peers also plays a significant role in whether or not an employee accesses mental health support and whether that support is then efficacious. For example, following several traumatic incidents (which varied in severity) seventeen police officers were given the opportunity to discuss their experiences during a CISD. In one of the sessions, officers expressed having been “mildly teased” by peers who were not involved, whereas mutual support from those who were involved was a highlight of the experience (Young & Parr, 2004). In a military sample, soldiers who had experienced TRiM previously were also more likely to be stigmatised by their peers. The authors noted that TRiM is an acceptable intervention only as long as it is fully supported by military commanders and peers (Jones, Burdett, Green, & Greenberg, 2017).

In the twelve studies where stigma was directly discussed by participants of the intervention, three (25%) had positive effects on symptom severity, seven (58%) made no difference, and two (17%) had an adverse effect. As the above demonstrates, the wider context of work needs to be considered when examining the impact of critical incidents. As Leonard and Alison (1999) put it the incident itself "is less a feature of importance than the context within which it is received by the officer and those around him" (p. 157).

Governance: A number of the included papers indicated governance as an important factor in predicting the efficacy of an early intervention. Both study authors and participants spoke about the benefits of implementing programmes of support into standard operating procedure. For example, police officers appreciated receiving a CISD not necessarily because of its efficacy but because it came with a fully mandated programme of care (Becker et al, 2009). Likewise, military officers preferred debriefing to be classified as primary care rather than as a mental health appointment because it lessened the stigma surrounding help-seeking (Cigrang et al, 2017). If all personnel are required to attend a debriefing it also gives the impression that employers are “benevolent enough to provide support” (Blacklock, 2012).

Grundligh, Knight, Naker, and Devries (2017) assessed the effectiveness of group debriefings delivered to fifty-nine assistant researchers who were exposed to secondary trauma after interviewing victims of child abuse. The results revealed that debriefings were not any more effective in reducing distress over simply engaging in a leisurely activity, but staff were less likely to report emotional distress when they perceived their organisation to be supportive (i.e. when an intervention is included as part of a wider mandated programme). This also affects organisational efficiency, the more employees feel positive about the support provided by their organisation the less time they spend off work (Rick, O’Regan, & Kinder, 2006). On the other hand, employers who do not provide any support
could be perceived as “negligent” (Ruck, Bowes, & Tehrani, 2013), resulting in employee dissatisfaction and anger (Leonard & Alison, 1999).

Under the theme of governance, we identified that managers were uniquely capable of creating either a safe learning climate for reflection (Firing, Johansen, & Moen, 2015) or a culture of criticism, blame, and stigma (Halpern, Gurevich, Schwartz, & Brazeau, 2009). In a large proportion of the included studies, workers reported how important it was to have the support of their supervisors or departmental chiefs (Brandt, Fullerton, Saltzgaber, Ursano, & Holloway, 2009). In two studies by Chongruksa and colleagues, supervisors were seen as an important source of support either for reducing stress in police officers (Chongruksa, Penprapa, Sawatsri, & Pansomboon, 2012) or for feeding workplace outcomes back to study evaluators (Chongruksa, Penprapa, Sawatsri, & Pansomboon, 2015). In studies where a manager/commander was involved (either during referral, facilitating the intervention itself, or providing feedback) or where the organisation was seen to preside over the running of an early intervention, 81% (21 out 26) found the intervention had positive effects on measures of symptom severity, quality of life, or workplace outcomes. In those studies where the organisation did not directly govern the intervention, only 36% (9 out of 25) found the intervention to be beneficial for recovery.

In summary, the success of post-trauma support relies upon organisational acceptance from both colleagues and managers. A mandated programme aids post-incident recovery by presenting a safe and accepting learning climate.

Social support: While not always explicitly discussed, social support was a re-occurring theme in the constituent studies. A number of intervention models (in particular TRiM and CISD) are designed to emphasise peer processes; reduce distress through collective recovery; restore group cohesion and unit performance (Mitchell, 1996; Greenberg, Langston, & Jones, 2008). Of the studies that delivered an early intervention in a group-based format, 74% (25 out of 34) found that peer support had facilitated recovery or had made for a better debriefing experience. For example, Armstrong et al (1998) delivered a set of group debriefings to American Red Cross workers following their response to an earthquake in Los Angeles. A number of workers were also debriefed individually based on the availability of trained staff. During the intervention, participants were invited to construct a group narrative of the event and to share coping strategies. Participants found both of these aspects to be helpful but the most important part was to discuss each other’s responses. In another study, when support from team members was low, employees exhibited higher levels of trauma-related stress (Frappell-Cooke et al., 2010). Thirty-three percent (4 out of 12) of the one-on-one interventions had positive effects on symptom severity. The majority of these interventions were designed to be
delivered this way (for example Trauma-focussed CBT and formal counselling) however one was described as adhering to principles of CISD—with the exception that it was not delivered in a group format.

Giving employees the opportunity to discuss a critical incident with their peers promotes postraumatic recovery. From a practical perspective, a group debriefing allows employees to construct a faithful account of the event, fill in any gaps in their knowledge or memory, and to translate the experience into factual and unemotional language. From a psychological perspective, collective recovery capitalises on social cohesion within teams and units, reinforces that reactions to the event are normal and shared by others, and helps to reintegrate employees back into the workforce.

**Perceived benefits:** The final theme emerging from the meta-ethnography was perceived benefits. This refers to a number of studies wherein participants evaluated the interventions to be subjectively useful even when scores of symptom severity suggest the contrary. Debriefing in particular is often well received and rated positively by those who take part in it. For example, Matthews (1998) evaluated a series of CISDs delivered to psychiatric workers a week after they had been assaulted by one of their clients. Debriefed participants reported higher levels of work-related stress and ratings of PTSD symptoms, compared to those who were merely assessed. However, almost 60% of the participants reported that the debriefing had helped them cope and reduced their feelings of stress. A large sample of military personnel positively evaluated their experience with debriefing, which correlated negatively with their scores of PTSD symptom severity (Belton, 2017). Emergency medical technicians also valued the opportunity to talk through their experiences with others and felt it was instrumental in reducing stress levels (Robinson & Mitchell, 1993). Of the debriefings that had no substantive effect on symptom severity, 78% (21 out of 27) were subjectively evaluated to be helpful.

Early interventions are appreciated by employees even if they do not objectively reduce or prevent posttraumatic stress. There are a number of different perceived benefits: Healthcare professionals appreciated the therapeutic climate that a debriefing created wherein symptoms could be openly discussed (Blacklock, 2012); rescue workers expressed how sharing the experience with others helped them to integrate their inner experiences with the outside world (Brandt et al., 2009); putting impressions into words helped search and rescue workers through to recovery (Firing, Johansen, & Moen, 2015); and for emergency medical technicians one of the most helpful things was the acknowledgement that the incident was “critical” and thus served to normalise reactions (Halpern, Gurevich, Schwartz, & Brazeau, 2009).
Table 3. Synthesis, including concepts and second- and third-order interpretations.

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Second-order interpretations</th>
<th>Third-order interpretations</th>
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<tbody>
<tr>
<td>ADHERENCE: (In)appropriate adoption/adaptation of intervention protocols.</td>
<td>(a) The interventions vary by their compliance with established protocols. Where a study departed from recommended methods, this was most often because of additional barriers that are specific to working with emergency response organisations. The nature of these challenges varies from logistical (e.g. work load), ethical and legal (e.g. withholding treatment during RCTs), to cultural (e.g. stigma and fears of impact to career progression).</td>
<td>(b) The original authors note that efficacy of an intervention relies upon proper adherence to tried and tested protocol. However, many practitioners highlight the necessity to adapt protocols to meet the needs of their targeted population, for example accounting for the heavy workload of emergency responders. The studies also point to the importance of addressing distinctive organisational culture (e.g. perceived stigma) before an intervention can support posttraumatic recovery.</td>
</tr>
<tr>
<td>ORGANISATIONAL CONTEXT: Requirements to adjust models for specific organisations; target populations.</td>
<td>(c) There is an overlapping need to implement support programmes at the organisational level, including formalising treatment into primary care, and involving managers or commanding officers to broadcast a supportive workplace climate.</td>
<td>(d) A mandated programme aids post-incident recovery by reducing the stigma associated with help-seeking; presents a culture of support from peers and management; and delivers on organisations' duty of care towards its workers.</td>
</tr>
<tr>
<td>GOVERNANCE: Facilitated by the organisation, included in standard protocols, and involves managers in the process.</td>
<td>(e) The studies show that group level discussions have reliable curative effects.</td>
<td>(f) Collective coping promotes recovery in a number of ways from practical (e.g. to construct a faithful account of the incident and for sharing coping strategies) to psychological (e.g. reconnecting workers to their communities and providing a sense of belonging).</td>
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<tr>
<td>SOCIAL SUPPORT: Peer advocacy; collective vs. individual coping.</td>
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<tr>
<td>PERCEIVED BENEFITS: Participants did or did not receive subjective (compared to objective) gains following the intervention.</td>
<td>(g) Whether interventions significantly reduce symptom severity or not, participants derive subjective value, appreciation, and satisfaction from debriefings.</td>
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Stakeholder Consultations

Alongside the review a series of consultations were conducted with ten individuals versed in early-interventions for trauma. These were undertaken to incorporate perceived best practice from a representative group. This did not account for a formalised process of analysis, but instead a supplement to the evidenced outcomes gathered in the review. The interview schedule was informed by key outcomes of this study including organisational context and the need to adapt interventions.

Participants in the consultation process represented policing (Metropolitan; Thames Valley, Surrey and Sussex), NHS staff (South London and Maudsley Foundation Trust), British Red Cross and the London Fire Brigade in roles including Rapid Response Support Services, Firearms Instruction, Welfare Officer, Occupational Health, Consultant Psychologist and Head of Psychological Health.

Five self-identified as a ‘trauma expert’ (i.e. PhD in trauma related area, at least 5 years’ experience in dealing with trauma/disasters), four as ‘trauma informed’ (i.e. attended training/education in trauma as a peer supporter or OH practitioner) and one as a ‘trauma practitioner’ (i.e. Master's degree in psychological trauma, HCPC registration, Accreditation in Trauma Therapy).

Figure 3 shows the rates at which participants reported having been trained in the delivery of early interventions models. It should be noted that some used the terms ‘CIS’, ‘CISM’ and ‘CISD’ (Crisis Management model abbreviations) and ‘debriefing’ interchangeably to indicate the same intervention approach. ‘Other’ models expressed were ‘Post-incident support program’ (remobilisation process), Trauma-focussed CBT, the ‘CALMER’ model (a form of Psychological First Aid, CALMER is an acronym for Consider, Acknowledge, Listen, Manage, Enable and Resource and is designed to remind responders to be thoughtful in their responses to crises: Davidson, 2010) and a ‘resilience building model for secondary trauma’.
Early Intervention Models

Participants were asked to think about the situations in which they had used early post-trauma intervention models. Defusing had been employed in rapid response for mental health support staff, usually on the first day, or within two to three days. An example of the use of defusing was following the Shoreham air crash. Individual and group debriefing was reported to be used formally in the police following major incidents such as serious assault, or internally within the team (not as an intervention); Psychological First Aid (PFA) was reported to be useful in humanitarian situations to build resilience where individuals experience ongoing trauma as well as being used by respondents not in front line positions such as providing information to teams to administer interventions themselves. CISD had been used with emergency responders following the London bombings of 2005. Non-specific intervention approaches were reported as part of a traumatic stress clinic in response to terror incidents, following the Ebola outbreak in Sierra Leone, peer-support systems during the Grenfell Tower disaster and post-shooting incidents over 24-hour to month-long periods.

Effectiveness of interventions was assessed using methods including self-report scales and interviews with recipients and delivery staff, via peer-review in follow-up sessions and as part of wider research or interventions. This was usually undertaken by psychologists or research teams.

Appropriateness of Models

Participants were asked to report on the appropriateness of interventions used for both staff and their organisations. This included the support provided across different time-frames.

Figure 3. Training in the delivery of early interventions undertaken by participants
On the day of exposure most respondents report that little formal intervention is offered (other than in-station debriefing) though the opinion was consistently expressed that it is important to meet with mental health support immediately. This lack of formal intervention is due to factors such as planning not being in place, availability of the exposed staff member (i.e. nurses may not have on-shift cover, police officers may still be out on their shift) and identification of a potential need such as by a line manager or specialist. In the first week it was reported that support varies depending on organisational protocols and whether an incident remains ongoing. However confidential helplines, onsite presence and peer support and a ‘buddy’ system for international responders were reported. Support during this time includes being supported to normalise feelings and emotions experienced to practice self-care. Within a month, support included CISD, operational debriefing and well-being checks but this remains reliant on managers or peers to notice that support is needed.

Participants were asked which models of early intervention they had found most helpful, and at which timeframe. Debriefing was reportedly considered useful by recipients, particularly in group settings. Defusing was reported to be effective when used in early stages (with debriefing, if required, as a higher level of support as a follow up). It was also suggested that defusing was often run alongside debriefing due to organisational need (staff having the time and space for support) but that provision of support is often difficult during these periods due to resource availability. TRiM was suggested to be ‘less convincing in a policing context’. Ultimately it was felt that all interventions may be effective if used correctly across the first month but that within the 24-hour to one week period, social support is essential.

**Important Features of Early Interventions**

Participants were asked to consider what would make it more likely that a staff member would engage with support provided post-trauma, and what is likely to prevent them from taking part. Some key factors arose from this stage of consultations. Firstly, familiarity with both what support is being offered and the person by whom it is being offered was reported to facilitate staff engagement with early interventions. This includes having some knowledge of the process beforehand with prior expectations being met, enabling trust in the facilitator(s) and confidence in their motives for offering support. One participant commented that ‘(they) know the language’ being spoken by the staff member and this aids in building trust. Secondly, provision of support during the initial period via a peer-support network is vital. This may take the form of groups being run by ‘people who are like the team’ and therefore familiar with the line of work in which the trauma-exposed staff member is involved. Examples were given of a traumatic event in a policing context receiving support from another officer (but with specialist psychological staff providing background support), nursing using a nurse facilitator or foreign humanitarian staff receiving support from a person of their own nationality. This provides the knowledge to the exposed staff member that there is some understanding on the part of the facilitator. Thirdly, commitment and encouragement of managers (or senior officers) was emphasised. It was considered difficult for staff to take early intervention support seriously when line
managers themselves do not. In fact, it was considered that line managers are often the most familiar with the staff member and therefore often the most appropriate to provide the support. This requires flexibility on the part of line managers to break from damaging protocols (such as conducting back to work interviews for mental health-related leave), to not be reactive and to lead by example such as by modelling behaviour: an example of this final point was given of a consultant visiting a staff psychologist. Fourthly, it was considered important to reach out to trauma-exposed staff, but without forcing adherence, and not waiting for them to seek support. This included setting up a physical space and making the presence of support systems known through communication channels.

A final factor was that of assured confidentiality as a means to encourage engagement with interventions. This is linked to one of the central factors believed to prevent engagement with support: that staff believe having their attendance in post-trauma support recorded will prevent future career advancement, such as by not receiving promotions. This is related to cultural facets, particularly stigma around being seen as weak or not adhering to the ethos of ‘this is my job’ and ‘this is just what I deal with’. It was suggested that such stigma might be overcome with consistent use of peer-level or highly qualified facilitators of support interventions, through building of trust, acknowledgement from the organisation or awareness raising such by ‘Blue Light Champions’. It is also important to show evidence of the benefits that support can have and clarifying terminology not commonly used in their day-to-day roles. Finally, team working helps engender an awareness of ‘this is how everybody feels’ which can normalise the emotions often experienced following trauma.

It was also stated that logistical issues often prevent engagement, such as staff not being available to cover roles. Participants detailed a need to often adapt or modify the approach taken in undertaking interventions. It was suggested that the appropriateness of an intervention’s delivery depends upon an understanding of structures within an organisation or community such as an ability to manage a groups or individuals. Other ways interventions have been adapted are based on timing and location. For example, check-in (as part of defusing) following the Shoreham air crash was brought forward to two weeks rather than one month which had the benefit of identifying those who were struggling to cope as well as allowing the organisation to see those who were recovering. TRiM was explicitly mentioned in terms of a need to adapt an intervention as some questions were felt to not be appropriate to be asked through fear that practitioners could be accused of hostility. It also includes a referral process which is two days long, a period felt to not be long enough for police officers.

**Areas of Improvement in Early Interventions**
Participants were asked to think about improvements that they feel could be made to increase effectiveness and acceptability of early intervention models in a policing context.
Perceived benefits of models were first outlined. CISD was considered to work well within mental health contexts where development of an understanding of the person’s experience and giving practical support is considered important. PFA was considered to help enhance skills and benefits from being provided within communities which allows people to feel supported by others like them. TRiM was again reported to be suited to a military setting due to the formality of the context. Defusing was felt to be beneficial due to its social context, being applied in groups with a manager who builds cohesive groups (though the warning was given that some do not feel they can be totally open in a group context). Finally, it was reported that long-term screening was felt to be beneficial as it allows for mental health needs to be monitored over time in order to catch individuals who have not engaged initially but whose levels of trauma-related symptoms have raised over time.

Participants suggested improvements could be made to early interventions, but no specific aspects of interventions were suggested; instead general areas for improvements were discussed. These were ensuring referral takes place within three to four days where possible; provision of education and pre-knowledge to potentially trauma-exposed staff; provision of more opportunities for training; increasing accessibility of interventions through joined up working, such as with the voluntary sector and; effective use of communication channels to reach wider communities.

Finally, participants were asked what they believed to be the ‘critical element’ that makes early interventions effective. Timeliness was considered to be critical, in particular ensuring that support is available at the earliest time possible. In addition, interventions must begin with a good assessment of individual need. It was also considered critical to normalise experiences (by listening and offering guidance). This was linked to acknowledgement being made by the organisation which provides affirmation that the staff member is experiencing normal reactions to the event. Acknowledgement includes people being made aware that others have noticed how difficult their experience was, giving permission for the trauma-exposed to talk about what they have been through. In this way, the organisation must ‘own’ the intervention process, a key element in making early interventions successful.

Comments on Review Findings

Participants were informed of each theme that emerged from the review and provided comments on each.

Adherence: Development of good practice and governance in services was acknowledged to have been a problem; defusing and debriefing interventions were particularly suggested to hinge on this. It was suggested that staff receive what is recommended by clearly monitoring the number of sessions, the content, by providing supervision and providing a check list to ensure certain things achieved in sessions. The CALMER model was cited as an example of an approach that is flexible enough to be
provided by professionals who do not necessarily adhere to the set protocol, but instead use clinical expertise.

Organisational Context: Frequent misalignment between what staff must do to take care of themselves and organisational need was cited, particularly in the case of delivering CISD interventions wherein practical and emotional needs require separation. Other organisational factors affecting effective interventions were also cited including non-joined up working, lack of appropriate spaces, capacity to provide support and also in some cases, the course of law needing to take place.

Governance: Participants cited a need for management to not be reactive but instead constructive and supportive. Overall however, intervention delivery and evaluation of effectiveness were often found to be made difficult by problems establishing the appropriate organisational buy-in and governance arrangements for formal evaluation to take place. This may also have been confounded by the organisation ‘moving on’, leading to a de-prioritisation or adoption of a more informal and less rigorous approach to the delivery of interventions over time.

Social Support: All participants commented on the importance of social support, with reports of interventions only being delivered in group contexts as this facilitates the building of resilience and the benefit of learning from one another. Some caution was also expressed however about conducting group-level interventions in which protocols are at a danger of being misapplied such as where groups are not naturally occurring, such as by bringing together members of staff in an arbitrary leading to mixing of teams, ranks or roles within an organisation.

Perceived Benefits: One participant commented that the most important aspect of therapy is the relationship between the worker and the person delivering the intervention. This relationship feeds into perceived benefit. This is fostered by ensuring that the trauma-exposed person is shown that what they are experiencing is an appropriate response and that they can be confident that they are approaching things in the best way for them.
Discussion

The aim of this review was to evaluate the available interventions for early management of posttraumatic stress in emergency response organisations. A further goal was to identify common features as well as differences between intervention models and assess their usefulness on a range of measures including psychological, social, and organisational benefits.

There was a limited selection of papers that were relevant to this review. The papers differed to each other in the intervention that was used and by the measures that included during assessment. While the participants were not always from the same population, they were all staff or volunteers working in emergency response (e.g. firefighters, police officers, military, healthcare specialists), and the support provided was delivered in the context of that role. Most interventions described group debriefing; however, a small number of the studies that met our inclusion criteria described support that would be more appropriately categorised as trauma therapy or prevention. The former is typically delivered to patients who have already exhibited PTSD symptom severity while the latter described interventions more typically intended for building resilience in preparation for possible trauma.

Of the studies that described trauma therapy, most had high reported success rates. However, it is important to distinguish between these therapeutic approaches and early interventions, which serve a different purpose. Trauma therapy differs from debriefing by the timing of the intervention, the role and experience of the facilitator, and by the intended outcomes. For example Trauma-focused CBT is an effective, first line treatment of PTSD (Bisson et al., 2007; Bradley, Greene, Russ, Dutra, & Westen, 2005; NICE, 2005) delivered one-on-one and involves confronting traumatic memories (Resick et al., 2002), modifying negative appraisals, correcting autobiographical memories, and removing maladaptive behavioural and cognitive coping strategies (Ehlers, Clark, Hackmann, McManus, & Fennell, 2005). By contrast, the focus for this review was to evaluate interventions that take place within the first month following a traumatic exposure (i.e. an early intervention). Therefore, trauma therapy interventions were analysed separately from the support described above.

Most early interventions used in emergency response organisations were found to be based on psychological debriefing which seeks “to prevent the development of adverse reactions” before they arise (Dyregrov, 1989; p. 25), rather than treat them once they have (Roberts, Kitchiner, Kenardy, & Bisson, 2009a; Sijbrandij et al., 2007). Some of these interventions were described as one-on-one defusing with a manager or supervisor (within the first 24-hours) but most involved debriefing within a group setting, focusing on narrative construction and social cohesion to support post-incident
recovery. In recent decades, several reports have been published demonstrating that debriefing has either no effect on trauma symptoms (Roberts, Kitchiner, Kenardy, & Bisson, 2009b) or negative effects on PTSD symptom severity (Rose, Bisson, Churchill, & Wessely, 2009) — serving only to aggravate post-incident distress. This has led to suggestions for the immediate discontinuation of its use. Again, this report differentiates between early interventions for trauma and ongoing trauma therapy in their defined intentions: specifically, that early interventions are not designed to reduce or 'cure' PTSD. In this review however, most early interventions did lead to reduced symptom severity. In the twelve studies where severity scores did not change, half were still evaluated to be helpful for participants.

This discrepancy between symptom scores and subjective evaluation may be indicative of many things. The positive effects of debriefing may be short, lasting briefly while participants complete their evaluation forms but not sufficiently enough to persist until follow-up assessment. Participants may evaluate the experience of debriefing differently to its ability to facilitate posttraumatic recovery. For example, Adler et al (2008) reported that CISD is well-liked and well-received by participants, not necessarily that participants found it to be effective. It is also possible that debriefings may impart benefits that are simply not captured by existing outcome measures (Deahl et al., 2000). For example, several fire service personnel received CISD following response to a motor vehicle accident. The researchers found that there were no significant effects of CISD on the Impact of Events Scale (relative to psychoeducation or assessment only controls) but those who had been debriefed were significantly less likely to consume alcohol as a means of coping and significantly more likely to report better quality of life (Tuckey & Scott, 2014). Thus, to uncover the benefits of early interventions, additional outcomes may be needed. This issue of measurement also highlights that the design and intended scope of early psychological debriefing has never been to treat or prevent the onset of PTSD (Dyregrov, 1989; 1998). Early interventions, primarily, act as a source of screening and management of post-incident distress in the initial windows of opportunity; to alleviate common stress reactions triggered by critical events (Mitchell, 1984). Therefore, it is not necessarily expected that debriefing will impact measures that have been previously used in the preliminary diagnosis of PTSD (Weiss & Marmar, 1996; Orsillo, 2011).

While some meta-analyses have shown that debriefing does not help to facilitate recovery (Rose et al., 2002; 2009; van Emmerik, Kamphuis, Hulsbosch, & Emmelkamp, 2002), other studies have shown it to have adverse effects. For example, Bisson et al (1997) found that at a 13-month follow up assessment, PTSD rates were significantly higher in the group that had been debriefed using a protocol based on Mitchell's CISD model (though was not strictly adherent to the CISD protocol) compared to control. Bisson and colleagues concluded that debriefing should be discontinued immediately. In our review, only two studies showed that group debriefing had had an adverse effect on symptom severity but in these cases, the protocol of debriefing was ambiguously defined. For
example, Belton (2017) reported that soldiers returning from deployment exhibited increases in posttraumatic stress following a set of mandatory debriefings. Importantly, however, the authors described the debriefing as generalised “rather than [using] any one specific model” of early intervention (Belton, 2017; p. 52).

Outcomes such as these highlight one of the emerging themes we synthesised from the review: Adherence. In our meta-ethnography, we identified that several describing interventions departed from established protocol. Dyregrov (1989; 1998) outlined that psychological debriefing is distinct from normal crisis intervention in that it is designed to be delivered in a group setting. Dyregrov also stipulates that debriefing should be instigated within a brief time after the event; led by a trained and experienced facilitator; and delivered with sufficient time to allow a thorough review of the different phases. For the most part, the studies adhered to these requirements, but a proportion of the described debriefings did not. In some cases, this meant modifying the protocol to such an extent that it distorted the original purpose of the method (e.g. was delivered one-on-one rather than to a group) which resulted in the intervention having no effect on symptom severity (Carlier et al., 2000; Macnab et al., 2004; Jones et al., 2007; Harris et al., 2011). Dyregrov (1998) also argues that studies cited in the debunking of psychological debriefing suffered substantial methodological issues. For the most part, this refers to issues of timing, length of session, and the process of self-selection to treatment conditions. For example, individuals who experience more posttraumatic stress are more likely to feel the need to discuss their experiences and thus allocate themselves to debriefing. Therefore, the ostensible inadequacy of psychological debriefing may stem from improper adherence to established protocol and from unequal symptom scores at baseline.

The review identified that interventions varied most in the timescale of delivery. Specifically, debriefings were sometimes delayed past the recommended window of opportunity. However, these modifications were often made as a requirement for meeting discrete organisational needs. For example, in a report by Mitchell, Stevenson, and Poole (2000) police constabularies delivered debriefings within the recommended 48-72 hours following an incident, however almost a third (of 41) had to delay support to account for officer availability. Likewise, Cigrang et al (2017) delivered shorter than recommended sessions to overcome logistical issues specific to the military. There are challenges specific to those working in emergency response: they work long hours, have poor work-life balance, and struggle to commit to personal and social activities (Gunasingarm et al., 2015). It is often also the case that emergency response organisations have a culture which devalues emotional vulnerability (Halpern et al., 2009). Many studies referred to workplace cultures that emphasise tough-mindedness and stigmatise mental ill health (Becker et al., 2009; Chongruksa et al., 2015; Cigrang et al., 2017; Deahl et al., 1994; Frappell-Cooke et al., 2010; Halpern et al., 2009; Jones et al., 2017; Kenardy et al., 1996; Young & Parr, 2004). This often results in reluctance to seek support. For example, police officers and staff are often nervous about asking for help with managing stress and
trauma, particularly if this could impact on their career progression (Hesketh & Tehrani, 2018). To overcome workplace barriers, support staff must consider the wider context in which a critical incident is experienced before applying an intervention model. In our review, we identified that the greatest successes were achieved when researchers modified established protocol to address organisational barriers and (e.g. Blacklock, 2012). While it is recognised that interventions should stick to previously validated models, there is also a need to appreciate an organisation's culture and understand that one size will not fit all when it comes to early interventions. Indeed Dyregrov (2003) stresses that flexibility is important when it comes to good crisis intervention.

In evaluating early interventions, the review looked not only at the approach as a whole, but also at particular models. It was found that TRiM to have higher success rates than CISD, but that TRiM and CISD models were both more effective than non-specific debriefing and brief early interventions such as Psychological First Aid. The relatively higher success rates for TRiM may be in part due to the formalised nature of the intervention, the perceived investment from commanders/managers, or from the emphasis that TRiM places on reducing stigma surrounding help-seeking (Watson & Andrews, 2017). TRiM is delivered by an officer from within the same unit (circumventing logistical barriers like security vetting and making it easier for peer supporters to identify unfolding issues). This kind of organisational support serves to reassure workers and facilitate recovery (Frappell-Cooke et al., 2010). This is reflected in the theme of governance emerging from the meta-ethnography. Governance refers to an overlapping need for organisations to formally implement early interventions into existing employee assistance programmes and occupational health. This type of internal support meets several needs: it creates room for reflection and a supportive learning climate (Firing et al., 2015), it assists in coordinating and referrals of staff to formal assessment (Rudd et al., 2015), delivers on employer expectations in provision of a safe environment (Ruck et al., 2013), and serves to increase worker performance (Creamer et al., 2012). Line managers play a particularly important role when it comes to the governance of an early intervention: Mitchell and Stevenson (2000) found that supportive supervisors with a positive management approach reduced the likelihood of psychological problems arising.

On the other hand, occupational health can be viewed negatively; and staff may be suspicious of senior management’s intentions rather than thankful for their support. For example, in a qualitative study by Drury et al (2013) there was some disagreement among professional first responders of the extent to which line managers (and more broadly, organisations) provide adequate psychosocial support or that existing internal support services are helpful. Halpern et al (2009) also found that when supervisors were seen to be unsupportive of their employees’ wellbeing, they were described in “angry, resentful, and disappointed tones” by emergency medical staff which led to distrust of management having their best interests in mind (p. 141). Likewise, Macnab and colleagues (2004) found there is distrust between medical staff unions and hospital senior management with importance
being placed in programmes supported by their union rather than their managers. Governance may be more relevant to organisations with clearly defined hierarchical structures, such as the police and the military, than to other roles in emergency response. For example, studies illustrate how group debriefings are consistent with the military tradition of after-action reviews, often delivered by unit commanders (Shalev et al., 1998; Deahl et al., 2000; Shoval-Zuckerman et al., 2015). Indeed, early interventions are acceptable among military personnel if “fully supported by military commanders” (Jones et al., 2017; p. 237). It is important to keep in mind organisational distinctions such as those between the military and the police: trauma in the military tends to be primary whereas policing requires personnel to potentially be exposed to multiple trauma types and to not operate in teams or groups. In the context of trauma support, delivery should not over-generalise comparisons between each. Nonetheless, the findings, together with previous reports, suggest that managers and commanders need to be involved and trained to spot and respond to mental health issues in emergency response staff (Hesketh & Cooper, 2017). To create an open and safe environment, senior management also need to implement support programmes at an organisational level and provide comprehensive training in advance of potentially traumatic experiences (Castro et al., 2006).

Overall, the review found consensus among the constituent studies that emergency responders did benefit from the opportunity to discuss their experiences and reactions to a traumatic incident with their peers. This was further supported by meta-ethnography which identified the importance of social support in recovering from a traumatic exposure. Being debriefed with peers promotes recovery by recognising their experiences in a familiar setting (Tehrani & Hesketh, 2018), by allowing them to put their experiences into words (Firing, Johansen, & Moen, 2015), fill in gaps of knowledge, achieve greater understanding of the event (Gould, Greenberg, & Hetherton, 2007), and to curtail feelings of detachment or loneliness (Olff, 2012). These interventions are highly valued in building social cohesion and support (Dyregrov, 2002). Although the use of debriefing has been challenged as a treatment for PTSD, our review demonstrates that debriefing can support emergency responders when it caters to specific needs of the population; is governed by the host organisation and supported by management and; harnesses existing social cohesion and peer processes within a team or unit.

Implications for practice

During the writing of this report, NICE updated its guidelines on Post-traumatic stress disorder (NICE, 2018ii). It includes an indication that the quality of evidence in developing guidance was of low quality which is reflected in the decision to ‘not make any recommendations for psychosocial interventions for the prevention of PTSD in adults’ (p.154). Of course, this guidance is not designed to specifically address emergency responder organisation needs in providing psychosocial interventions to trauma-exposed staff. The use of early trauma interventions in organisations and community settings for the purposes of social cohesion, education, personal wellbeing and support would be more appropriately
located in a body more knowledgeable in the evaluation of organizational interventions. As the NICE Development Group stated: “Occupational groups have campaigned to have the psychological impact of their work recognised and support services delivered as part of their conditions of employment. In addition, in military organisations, there exists a specific drive to early interventions—that of enabling traumatised combatants to return to front line duties as soon as possible” (NICE, 2005; p. 81). In response to comments proposed by the College of Policing prior to the release of the December 2018 update of the NICE guidance, the developers of this guidance stated that:

‘The guidance can…inform the policy and practice of police forces in relation to the assessment and treatment of PTSD but it does not offer guidance to occupational health services’.

Whilst benefits of multiple intervention models were identified in our review, as well as in the first-hand reports of trauma experts and practitioners, no one model emerges as more suitable for use in a policing context over another. Instead our outcomes suggest a context in which the police force can apply a chosen model. The effectiveness of providing early intervention support will not be optimised unless it is recognised that these aspects need full integration into working practice, such as by indoctrinating new recruits in the benefits of psychosocial support. A full list of recommendations for delivering early-interventions for trauma in a policing context is outlined below.

Recommendations

Following a review of the literature including evaluating themes emerging from a meta-ethnography, we identified the following factors as the most important when evaluating early interventions for psychological trauma in emergency response organisations:

- It is important to adhere to the main components of an intervention model. However, in the majority of cases, practitioners depart from recommended practice (with only a third adhering). This includes varying the format (group vs one-on-one), number and duration of sessions. Deviation from the protocol was often intended and necessary due to the organisational context, for example, the workload and nature of the work. This means that personnel cannot necessarily attend a session within the model’s intended timeframe, and instead receiving early intervention support later. Allowances often must be made and, as we see in this review, they are. It should be noted that based on the information provided by included studies the review cannot determine whether varying from a protocol had any significant influence over the participant’s wellbeing or the efficacy of the intervention.

- Providing ample support for employees requires understanding distinct organisational cultures. The success of an intervention becomes more likely when practitioners cater to specific needs and work to overcome logistical (e.g. workload) and cultural barriers (e.g. stigma).
Management plays an important role in facilitating posttraumatic recovery in emergency responders. In our review, the most significant benefits from an early intervention occurred when it was part of a wider programme of support mandated by the organisation. Managers were important during referral and assessment of work-related outcomes; to assign organisational resources; and to create a supportive and accepting workplace environment. This might also entail providing managers with a basic level of psychoeducation such as in the principles of psychological first aid. There may be a role for occupational health to work closely with management to ensure that routes to referral are streamlined.

Within the initial windows of opportunity (i.e. before formal therapy), peer group processes play an important role in the management of post-incident stress, buffering more significant issues that may appear down the line. In this review, recovery was more likely to occur when emergency responders were given the opportunity to support one another. Outcomes suggest that when a worker has the informal support of their peers following traumatic exposure, they are less likely to need formal occupational health intervention or referral to clinical treatment. In this way the efficacy of peer interventions doesn't come from having a single trauma-informed or trained staff member, but rather comes from the camaraderie and sense of common fate that emerges from a shared trauma.

Early interventions (debriefings in particular) are valued by emergency responders. In our review employees derived a level of subjective satisfaction and appreciated the opportunity to discuss their experiences. The results of the review also indicate that objective measures of PTSD may not fully capture the positive outcomes emerging from an early intervention.

Additional outcomes from the assessment of early interventions are needed that incorporate a range of different outcome measures to characterise benefits that align with social well-being. This might include measures of engagement in potentially harmful behaviours such as alcohol reliance as well as organisational benefits including length of absence from work.

Further evidence from this review which was supported by the outcomes of stakeholder consultations are presented here as additional recommendations in the delivery of early interventions for trauma:

- Whilst it is not always possible for practical and social support to be offered at the earliest possible time, it is beneficial to acknowledge the trauma where possible. This may simply be through recognition of the difficulty that the member of staff is having following exposure to trauma or access to screening. This is facilitated by the development of a supportive culture in which staff are confident to report trauma exposure and subsequent need for psychosocial support. Referral for those who require it should take place as soon as possible, and ideally within a week.

- Factors suggested to enhance engagement in early-interventions that are offered to trauma-exposed staff include:
  - Familiarity with both the facilitator and the process. This helps foster trust in the motives of the supporting organisation. This can be achieved by the intervention being provided by someone with familiarity with the worker’s role. For example, police
officers to be supported by a trained facilitator (such as occupational health or welfare counsellor) from within policing.

- Not only are managers often the most familiar person to the staff member and therefore in a favourable position to provide initial support, they can also aid in increasing staff engagement by modelling responses themselves. This might involve managers being the first to seek support following exposure to a traumatic event. This approach is modelled by defusing/demobilising in which managers are trained to think about the wellbeing of staff.

- Confidentiality should be ensured to those who attend intervention support. Beliefs that seeking psychosocial support makes subsequent career advancement improbable are causes of prevention in engagement. Whilst such cultural artefacts may be difficult to change; ensuring confidential practice is a way to encourage engagement in early interventions.

- It is important for organisations to reach out to those exposed to traumatic events. This should coincide with encouraging and supporting personnel to take responsibility for their own wellbeing.

- Education is important in increasing understanding of early interventions which may increase effectiveness and engagement. Potentially trauma-exposed staff should be supported to increase pre-knowledge of support available to them and the process that may occur (screening; intervention; social support) in the event of experiencing trauma.

- Opportunities for intervention providers to receive training should be available to staff on an ongoing basis. Perhaps most importantly this includes training in the recognition of danger signs in staff and how to refer people on for intervention support.

This review highlights the importance of adherence to the core protocols of early interventions, but with a mindful consideration of the needs of the target population that often requires some flexibility in approach. Equally important is organisational support and dedication to the provision of early interventions for the benefits of staff and the organisation itself. The outcomes of this review can be built upon to develop a new approach to early interventions in emergency services. This should start with the trialling of existing interventions grounded in the recommendations presented in this review, within a small number of policing contexts before wider roll out.
References


Officers: preemployment, critical incidents and organizational influences. 

*Traumatology, 12*, 170-177.


Appendices

Appendix A – Search terms


Appendix C – Full results from the meta-ethnography.

Appendix D – Glossary of acronyms.

Appendix E – Full references to studies included in this review.
Appendix A – Search terms

1 – 20: Early interventions

22 – 39: Emergency response and occupational relevance

41 – 60: Psychological trauma

1  (Early adj3 intervention*).tw.
2  Debrief*.tw.
3  (Victim adj5 (witness* or support)).tw.
4  (Training adj3 (trauma* or stressor* or support* or emergenc*)).tw.
5  (Social adj3 (support or well?being or intervention)).tw.
6  (Spiritual adj3 (support or well?being or intervention)).tw.
7  CBT.tw.
8  Psychological first aid.tw.
9  (Focus* adj3 support).tw.
10 Critical Incident Stress Debrief*.tw.
11 Critical Incident Stress management.tw.
12 Trauma Risk Management.tw.
13 support post trauma.tw.
14 (Individual* adj5 (debrief* or support* or intervention)).tw.
15 (Communit* adj5 (debrief* or support* or intervention)).tw.
16 (Group adj5 (debrief* or support* or intervention)).tw.
17 (Psycholog* adj3 model*).tw.
18 exp Social Support/
19 exp Peer Group/
20 exp Crisis Intervention/
21 or/1-20
22 Organ?ation*.tw.
23 Staff.tw.
24 Emergenc*.tw.
25 Rescue.tw.
26 Officer*.tw.
27 Police.tw.
28 Fire.tw.
29 Ambulance.tw.
30 Military.tw.
31 Soldier*.tw.
32 Soldier Peer Mentoring.tw.
Humanitarian.tw.
Post office.tw.
Royal mail.tw.
Transport.tw.
exp Occupational Disease/
exp Law Enforcement/
exp Rescue Work/
or/22-39
exp mental health/
(Post adj3 trauma*).tw.
exp PTSD/
exp Anxiety/
(compassion adj3 fatigue).tw.
Shock.tw.
Fear.tw.
Emotion*.tw.
Burnout.tw.
Sleep.tw.
Violen*.tw.
(Abus* adj3 (substance* or drug*)).tw.
(trauma adj (primary or secondary)).tw.
Well?being.tw.
exp Trauma/
exp psychological trauma/ or stress disorders, post-traumatic/ or stress disorders, traumatic,
(adverse adj3 effects).tw.
(Post adj3 trauma).tw.
(Expos* adj5 (stress* or trauma*)).tw.
(professional adj3 burn?out).tw.
or/41-60
21 and 40 and 61
limit 62 to english language
Appendix B – Downs and Black checklist for the assessment of the methodological quality of both randomized and non-randomized studies

<table>
<thead>
<tr>
<th>Item</th>
<th>Criteria</th>
<th>Possible Answers</th>
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| 1   | Is the hypothesis/aim/objective of the study clearly described? | Yes = 1  
No = 0 |
| 2   | Are the main outcomes to be measured clearly described in the Introduction or Methods section? If the main outcomes are first mentioned in the Results section, the question should be answered no. | Yes = 1  
No = 0 |
| 3   | Are the characteristics of the patients included in the study clearly described? In cohort studies and trials, inclusion and/or exclusion criteria should be given. In case-control studies, a case-definition and the source for controls should be given. | Yes = 1  
No = 0 |
| 4   | Are the interventions of interest clearly described? Treatments and placebo (where relevant) that are to be compared should be clearly described. | Yes = 1  
No = 0 |
| 5   | Are the distributions of principal confounders in each group of subjects to be compared clearly described? A list of principal confounders is provided. | Yes = 2  
Partially = 1  
No = 0 |
| 6   | Are the main findings of the study clearly described? Simple outcome data (including denominators and numerators) should be reported for all major findings so that the reader can check the major analyses and conclusions. (This question does not cover statistical tests which are considered below). | Yes = 1  
No = 0 |
| 7   | Does the study provide estimates of the random variability in the data for the main outcomes? In non-normally distributed data the interquartile range of results should be reported. In normally distributed data the standard error, standard deviation or confidence intervals should be reported. If the distribution of the data is not described, it must be assumed that the estimates used were appropriate and the question should be answered yes. | Yes = 1  
No = 0 |
| 8   | Have all important adverse events that may be a consequence of the intervention been reported? This should be answered yes if the study demonstrates that there was a comprehensive attempt to measure adverse events. (A list of possible adverse events is provided). | Yes = 1  
No = 0 |
| 9   | Have the characteristics of patients lost to follow-up been described? This should be answered yes where there were no losses to follow-up or where losses to follow-up were so small that findings would be unaffected by their inclusion. This should be answered nowhere a study does not report the number of patients lost to follow-up. | Yes = 1  
No = 0 |
| 10  | Have actual probability values been reported (e.g. 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001? | Yes = 1  
No = 0 |

External validity
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<th>Question</th>
<th>Yes</th>
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<td>11 Were the subjects asked to participate in the study representative of</td>
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<td>the entire population from which they were recruited? The study must</td>
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<td>identify the source population for patients and describe how the</td>
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<td>patients were selected? Patients would be representative if they</td>
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<td>comprised the entire source population, an unselected sample of</td>
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<td>consecutive patients, or a random sample. Random sampling is only</td>
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<td>feasible where a list of all members of the relevant population exists.</td>
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<td>Where a study does not report the proportion of the source population</td>
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<td>12 Were those subjects who were prepared to participate</td>
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<td>representative of the entire population from which they were recruited?</td>
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<td>The proportion of those asked who agreed should be stated.</td>
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<td>Validation that the sample was representative would include demonstrating</td>
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<td>that the distribution of the main confounding factors was the same in</td>
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<td>the study sample and the source population.</td>
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<td>13 Were the staff, places, and facilities where the patients were</td>
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<td>Unable to determine = 0</td>
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<td>treated, representative of the treatment the majority of patients</td>
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<td>receive? For the question to be answered yes the study should</td>
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<td>demonstrate that the intervention was representative of that in use</td>
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<td>in the source population. The question should be answered no if, for</td>
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<td>example, the intervention was undertaken in a specialist centre</td>
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<td>unrepresentative of the hospitals most of the source population would</td>
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<td>Internal validity - bias</td>
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<td>14 Was an attempt made to blind study subjects to the intervention</td>
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<td>they have received? For studies where the patients would have no way</td>
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<td>of knowing which intervention they received, this should be</td>
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<td>answered yes.</td>
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<td>15 Was an attempt made to blind those measuring the main outcomes of</td>
<td>Yes = 1</td>
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<td>Unable to determine = 0</td>
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<td>the intervention?</td>
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<td>16 If any of the results of the study were based on “data dredging”,</td>
<td>Yes = 1</td>
<td>No = 0</td>
<td>Unable to determine = 0</td>
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<td>was this made clear? Any analyses that had not been planned at the</td>
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<td>outset of the study should be clearly indicated. If no retrospective</td>
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<td>unplanned subgroup analyses were reported, then answer yes.</td>
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<td>17 In trials and cohort studies, do the analyses adjust for different</td>
<td>Yes = 1</td>
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<td>lengths of follow-up of patients, or in case-control studies, is the</td>
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<td>time period between the intervention and outcome the same for cases and</td>
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<td>controls? Where follow-up was the same for all study patients the</td>
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<tr>
<td>answer should be yes. If different lengths of follow-up were</td>
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<tr>
<td>adjusted for by, for example, survival analysis the answer should be</td>
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<tr>
<td>yes. Studies where differences in follow-up are ignored should be</td>
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<tr>
<td>answered no.</td>
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<tr>
<td>18 Were the statistical tests used to assess the main outcomes</td>
<td>Yes = 1</td>
<td>No = 0</td>
<td>Unable to determine = 0</td>
</tr>
<tr>
<td>appropriate? The statistical techniques used must be approporite to the</td>
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<tr>
<td>data. For example nonparametric methods should be used for small sample</td>
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<tr>
<td>sizes. Where little statistical analysis has been undertaken but where</td>
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<tr>
<td>there is no evidence of bias, the question should be answered yes. If</td>
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<tr>
<td>the distribution of the data (normal or not) is not described it must</td>
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<tr>
<td>be assumed that the estimates used were appropriate and the question</td>
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<tr>
<td>should be answered yes.</td>
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<tr>
<td>Question</td>
<td>Yes</td>
<td>No</td>
<td>Unable to determine</td>
</tr>
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<tr>
<td>Was compliance with the intervention/s reliable?</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>Where there was non-compliance with the allocated treatment or where</td>
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<tr>
<td>there was contamination of one group, the question should be answered</td>
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<tr>
<td>no. For studies where the effect of any misclassification was likely to</td>
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<tr>
<td>bias any association to the null, the question should be answered yes.</td>
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<tr>
<td>Were the main outcome measures used accurate (valid and reliable)?</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
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<tr>
<td>For studies where the outcome measures are clearly described, the</td>
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<tr>
<td>question should be answered yes. For studies which refer to other work</td>
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<tr>
<td>or that demonstrates the outcome measures are accurate, the question</td>
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<tr>
<td>should be answered as yes.</td>
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<tr>
<td>Internal validity - confounding (selection bias)</td>
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<tr>
<td>Were the patients in different intervention groups (trials and cohort</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
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<tr>
<td>studies) or were the cases and controls (case-control studies) recruited</td>
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<tr>
<td>from the same population? For example, patients for all comparison</td>
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<td>groups should be selected from the same hospital. The question should</td>
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<tr>
<td>be answered unable to determine for cohort and case-control studies</td>
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<tr>
<td>where there is no information concerning the source of patients included</td>
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<td>in the study.</td>
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<tr>
<td>Were study subjects in different intervention groups (trials and cohort</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>studies) or were the cases and controls (case-control studies) recruited</td>
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<tr>
<td>over the same period of time? For a study which does not specify the</td>
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<tr>
<td>time period over which patients were recruited, the question should be</td>
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<tr>
<td>answered as unable to determine.</td>
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<tr>
<td>Were study subjects randomized to intervention groups? Studies which</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>state that subjects were randomized should be answered yes except</td>
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<tr>
<td>where method of randomization would not ensure random allocation. For</td>
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<tr>
<td>example alternate allocation would score no because it is predictable.</td>
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<tr>
<td>Was the randomized intervention assignment concealed from both patients</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>and health care staff until recruitment was complete and irrevocable?</td>
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<tr>
<td>All non-randomized studies should be answered no. If assignment was</td>
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<tr>
<td>concealed from patients but not from staff, it should be answered no.</td>
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<tr>
<td>Was there adequate adjustment for confounding in the analyses from</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
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<tr>
<td>which the main findings were drawn? This question should be answered</td>
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<tr>
<td>no for trials if: the main conclusions of the study were based on</td>
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<tr>
<td>analyses of treatment rather than intention to treat; the distribution</td>
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<tr>
<td>of known confounders in the different treatment groups was not</td>
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<tr>
<td>described; or the distribution of known confounders differed between</td>
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<tr>
<td>the treatment groups but was not taken into account in the analyses. In</td>
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<tr>
<td>non-randomized studies if the effect of the main confounders was not</td>
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<tr>
<td>investigated or confounding was demonstrated but no adjustment was made</td>
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<tr>
<td>in the final analyses the question should be answered as no.</td>
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<tr>
<td>Were losses of patients to follow-up taken into account? If the numbers</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>of patients lost to follow-up are not reported, the question should be</td>
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<tr>
<td>answered as unable to determine. If the proportion lost to follow-up</td>
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<tr>
<td>was too small to affect the main findings, the question should be</td>
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<tr>
<td>answered yes.</td>
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<tr>
<td>Did the study have sufficient power to detect a clinically important</td>
<td>Yes</td>
<td>No</td>
<td>0</td>
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<tr>
<td>effect where the probability value for a difference being due to chance</td>
<td></td>
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<tr>
<td>is less than 5%? Sample sizes have been calculated to detect a</td>
<td></td>
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<tr>
<td>difference of x% and y%.</td>
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</tr>
</tbody>
</table>
Appendix C – Full results from the meta-ethnography.

<table>
<thead>
<tr>
<th>Study citation</th>
<th>Adherence</th>
<th>Organisational context</th>
<th>Governance</th>
<th>Social support</th>
<th>Perceived benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adler et al. (2008)</td>
<td>&quot;we adhered to the CISD model [with] personnel trained in CISD&quot;</td>
<td>The sessions were comparable to stress education classes but were &quot;adapted for use in a deployed environment&quot;</td>
<td>&quot;Study personnel had no formal relationship to the soldiers or unit in the study. They were not in the chain of command or part of the deployed unit.&quot;</td>
<td>The intervention places &quot;emphasis on peer processes&quot;</td>
<td>CISD is &quot;well received and well liked&quot; and &quot;appeared to have some positive effects on outcomes relevant to a military organization&quot;</td>
</tr>
<tr>
<td>Adler et al. (2009)</td>
<td>&quot;A protocol deviation did occur ... to fit the [team] schedule&quot;</td>
<td>The intervention &quot;require[d] a tailored approach&quot;</td>
<td>Platoon leaders were used to &quot;to reinforce this support&quot;</td>
<td>&quot;focuses on unit cohesion, identifies what peers and leaders can do to help unit members&quot;</td>
<td>&quot;participants rated Battlemind debriefing and Battlemind training more positively than stress education&quot;</td>
</tr>
<tr>
<td>Armstrong et al. (1998)</td>
<td>The intervention outlined followed principles of CISD but differed by being designed to respond to multiple incidents and conducted 1-in-1 or in groups.</td>
<td>&quot;developed specifically to address and debrief ARC personnel &quot;</td>
<td>[the organisation] created a mental health component to provide services including debriefing to their workers&quot;</td>
<td>&quot;opportunity for members to support each other&quot;</td>
<td>&quot;Men [rated] the debriefing somewhat more positively than women, and...as the number or participant to facilitators in their groups decreased.&quot;</td>
</tr>
<tr>
<td>Beaumont et al. (2016)</td>
<td>The intervention outlined followed a previously published model.</td>
<td>The model was developed specifically for those in roles who experience &quot;self-criticism, self-blame and shame&quot;</td>
<td>Workers were referred to external psychotherapists for treatment rather than treated in-house.</td>
<td></td>
<td>The intervention was found to be &quot;acceptable&quot; to those experiencing symptoms of PTSD despite it have no demonstrable influence of symptom severity.</td>
</tr>
<tr>
<td>Study citation</td>
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<td>Becker et al.</td>
<td>Participants may have been reluctant to &quot;seek treatment but did not want to indicate this&quot;. Possibly as a result of the stigma associated with seeking help in that population.</td>
<td>Participants were keen for treatment to be mandated by their organisation as a means to avoid stigma and to highlight that the organisation is meeting their duty of care to workers.</td>
<td>Participants indicated favouring group-based treatments even if they showed no efficacy on objective markers of PTSD.</td>
<td>&quot;Exposure [therapy] was rated as significantly more credible, although the actual magnitude of difference was fairly small.&quot; Medication was the least popular therapy.</td>
<td>&quot;Participants often rated the intervention favorably&quot;. Subjective evaluations were associated with scores for symptom severity.</td>
</tr>
<tr>
<td>Belton (2017)</td>
<td>&quot;group psychological debriefings in general are examined rather than any one specific model&quot;</td>
<td>&quot;The practicalities of accessing this population preclude[d] random selection&quot;</td>
<td>The study outlined refers to a mandatory set of briefings conducted at and by the organisation.</td>
<td>&quot;Positive social support, both before and after the traumatic event, is a protective factor&quot;</td>
<td>&quot;Intervention content rated as most helpful included communicating with others...having a positive outlook on...relaxation techniques...and problem solving.&quot;</td>
</tr>
<tr>
<td>Biggs et al.</td>
<td>&quot;based on the principles of PFA&quot;</td>
<td>&quot;intervention efficacy may have been influenced by … number and spacing of sessions&quot; owing to &quot;command and job duties&quot;.</td>
<td>The study outlined refers to an intervention conducted at and by the organisation.</td>
<td>&quot;communicating with others&quot; and &quot;providing support to a buddy&quot; were reported to be among the most helpful aspects of the intervention.</td>
<td>&quot;On an organizational level, the debriefing would help to generate a therapeutic climate where cognitive, affective, and behavioral symptoms can be openly discussed.&quot;</td>
</tr>
<tr>
<td>Blacklock (2012)</td>
<td>The intervention outlined, follows CISD principles but &quot;conjoins the two windows of response into a single session&quot;</td>
<td>&quot;an adapted version proved useful in this case&quot;</td>
<td>Workers were thankful for the debriefing, in particular appreciating that &quot;employers were ... benevolent enough to provide that support&quot;</td>
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<tr>
<td>Study citation</td>
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<tr>
<td>Brandt et al. (2009)</td>
<td>Non-participation may have been due to &quot;logistical reasons&quot; specific to the studied population (hospital personnel).</td>
<td>Participants reported how important it was to have the support of managers or departmental chiefs.</td>
<td>&quot;Ongoing communication is critical in the disaster environment. Individual and group isolation must be avoided.&quot;</td>
<td>&quot;Sharing the experience… in debriefing groups appeared to help people move from distancing to integrating their inner experience with the outside world&quot;</td>
<td>Participants &quot;perceived debriefing to be helpful&quot; even though &quot;it did not influence their emotional adaptation&quot;</td>
</tr>
<tr>
<td>Carlier et al. (1998)</td>
<td>&quot;The formal seven-phase CISD procedure was adhered to in the debriefing&quot;</td>
<td>&quot;for operational reasons about half of the officers involved failed to undergo debriefing&quot;</td>
<td>The study/intervention was commissioned but not run by the organisation.</td>
<td>There is a &quot;natural tendency in people who have recently been traumatized to seek emotional support&quot; from others.</td>
<td>&quot;Respondents who received debriefing generally expressed great satisfaction with it&quot; but there was no relationship between satisfaction and symptom levels.</td>
</tr>
<tr>
<td>Carlier et al. (2000)</td>
<td>&quot;The debriefing adhered to the structure&quot; laid out by the original authors.</td>
<td>&quot;Randomization was not feasible&quot; due to organisation regulations.</td>
<td>Debriefing is offered as &quot;standard practice&quot; in the outlined organisation.</td>
<td></td>
<td>The &quot;didactic component to our debriefing protocol was very helpful to the participants&quot;</td>
</tr>
<tr>
<td>Chemtob et al. (1997)</td>
<td>&quot;The treatment in this study may well have diverged from others that may be more or less effective.&quot;</td>
<td>The authors highlight that it is &quot;not readily feasible in a postdisaster situation to withhold treatment from a group&quot;</td>
<td></td>
<td></td>
<td>The results of the study suggested that there were &quot;high levels of client satisfaction&quot; but those had &quot;no differential impact on psychometric measures&quot;</td>
</tr>
<tr>
<td>Study citation</td>
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<tr>
<td>Chongruksa et al. (2012)</td>
<td>Some officers could not be included in the intervention following transferral to another province.</td>
<td>Participants expressed that one of their top stressors was treatment from commanding officers and scarcity of organisational resources.</td>
<td>The intervention sought, as a primary aim, to &quot;reduce group resistance and build cohesion&quot;. Seeing others impart their stories helped participants to open up.</td>
<td>The reductions in symptom severity were suggested to arise from the social support that was provided by the other members of the intervention group.</td>
<td>&quot;participants expressed their appreciation...[for the opportunity] to express their distress and concerns regarding deployment with rangers from different units&quot;</td>
</tr>
<tr>
<td>Chongruksa et al. (2015)</td>
<td>Barriers to help seeking in this population include &quot;fears of public stigma and the character of military culture which allows seeking help only from a comrade&quot;</td>
<td>The &quot;risk is omnipresent&quot; in a way that is unique to that workplace context. Threats to survival were &quot;very likely&quot; at all times.</td>
<td>The paper recognises the importance of supervisors for assessing work-related outcomes; job performance and worker retention.</td>
<td>The similarity of the debriefing to operational debriefings meant soldiers could participate without stigma. Working with managers was also seen to be beneficial to recovery.</td>
<td>Classification of the intervention as primary care, rather than as a mental health appointment helped to reduce perceived stigma.</td>
</tr>
<tr>
<td>Cigrang et al. (2005)</td>
<td>The intervention was limited to provide only psychological first aid, and specifically removed single session debriefing. The sessions were also shorter than standard procedure.</td>
<td>The &quot;risk is omnipresent&quot; in a way that is unique to that workplace context. Threats to survival were &quot;very likely&quot; at all times.</td>
<td>Referrals to treatment were &quot;facilitated by unit leadership&quot;. Managers were a part of decision making during the assessment and recommendation sessions.</td>
<td>Participants reported that recovery was bolstered by being &quot;well-connected and supported by his military peers&quot; and generally high levels of social support in their environment.</td>
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<tr>
<td>Cigrang et al. (2017)</td>
<td>Researchers adapted previous models of mental health provision to deliver shorter sessions, thereby overcoming logistical issues specific to the organisational context.</td>
<td>The barriers for help-seeking in this organisation incl. stigma, career impact, distrust of mental health services, and the logistics of attending multiple sessions.</td>
<td>The intervention was facilitated by the organisation and located within the organisation's own treatment facilities.</td>
<td>Classification of the intervention as primary care, rather than as a mental health appointment helped to reduce perceived stigma.</td>
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<tr>
<td>Study citation</td>
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<tr>
<td>Deahl et al. (1994)</td>
<td>The intervention &quot;was not rigorously standardised...[for] content and timing&quot; but &quot;contained the same common elements&quot;.</td>
<td>The cultural context &quot;emphasises toughness and tends to militate against seeking help for psychological problems.&quot;</td>
<td>&quot;Organisational and managerial&quot; factors were highlighted among the curative factors in recovering from exposure. &quot;training was, by operational necessity&quot;</td>
<td>In this study, &quot;group cohesion factors&quot; appeared to have &quot;no beneficial effect&quot;</td>
<td>&quot;many soldiers valued the opportunity to express feelings of anger and guilt and derived comfort from the realisation that these were a normal emotional response to trauma&quot;</td>
</tr>
<tr>
<td>Deahl et al. (2000)</td>
<td>The intervention followed a manualised protocol.</td>
<td>The first session was tailored to discuss the types of &quot;events [servicemen] were likely to encounter&quot;. Operational factors meant some could not participate.</td>
<td>Debriefing was delivered as part of the organisation's routine operational training package. Commanders were involved in allocating to condition.</td>
<td>Recognises the &quot;complex group dynamics which develops amongst a cohesive close-knit group who have shared a common trauma&quot;</td>
<td>Debriefing &quot;may have a beneficial effect[s]&quot; not captured by existing outcome measures and thus additional ones are needed e.g. substance misuse.</td>
</tr>
<tr>
<td>Dickstein et al. (2013)</td>
<td>Participants received a version of the intervention that was adapted for use in military populations.</td>
<td></td>
<td>The intervention was delivered as part of routine clinical care.</td>
<td></td>
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</tr>
<tr>
<td>Difede et al. (2007)</td>
<td>The intervention was based on a manualised protocol. Sessions were assessed for adherence.</td>
<td>The protocol was &quot;modified for use with disaster workers&quot;. &quot;Some patients had difficulty attending sessions due to logistical constraints&quot;.</td>
<td>The intervention was conducted by an external research team.</td>
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<td>Study citation</td>
<td>Adherence</td>
<td>Organisational context</td>
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<tr>
<td>Drury et al. (2013)</td>
<td>Participants identified stressors unique to emergency response: including lack of down-time, actions of managers and the ‘target culture’.</td>
<td>There was some disagreement on the effectiveness of support provided by line managers or the organisation.</td>
<td>Participants agreed that services would be improved through additional: “peer support programmes... and other techniques for peer supporters”</td>
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</tr>
<tr>
<td>Firing et al. (2015)</td>
<td>The intervention was developed to utilise the benefits from traditional debriefing and psychological debriefing, following guidelines from an operational handbook.</td>
<td>The model was developed to cater to the needs of emergency responders.</td>
<td>Participants found it helpful to have the support from their commanders/ managers: “support from the commander created room for reflection and ... a safe learning climate”</td>
<td>Participants expressed the benefits of “knowing that the others [were] also affected by strong impressions” it helped to normalise responses and create a “kinship”</td>
<td></td>
</tr>
<tr>
<td>Frappell-Cooke et al. (2010)</td>
<td>The intervention closely followed the guidelines laid out in previously published work.</td>
<td>Has a “distinctive organizational culture”. E.g. Stigma is a likely barrier to help-seeking in high-threat organisations.</td>
<td>The authors of the research suggest that the intervention acts as reassurance that the organisation has in place a protective system for its workers.</td>
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<tr>
<td>Gould et al. (2007)</td>
<td>The intervention referred to a longstanding programme of support using TRIM.</td>
<td>The military reflects “a highly selected group and unrepresentative of the civilian populations being trained to fight and work in a cohesive group”</td>
<td>Managers/leaders were supportive of participation; were involved in allocation and assessment of personnel to the programme.</td>
<td>Greater understanding achieved “through exposure to other peoples’ related experiences.” “most personnel turned to informal networks for support” (i.e. peers)</td>
<td>The authors suggest that “morale may have account[ed] for the” changes in symptom scores. As well as the differences in “emotional and practical skills”</td>
</tr>
<tr>
<td>Study citation</td>
<td>Adherence</td>
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<td>Greenberg et al. (2010)</td>
<td>The intervention was delivered by &quot;experienced service personnel who have been trained [and assessed] by military mental health professionals&quot;.</td>
<td>Lower response numbers due to &quot;drafting policies&quot; than nonresponse.</td>
<td>&quot;Ministry of Defence has been keen to explore the development of occupational interventions&quot;. Soldiers encouraged to &quot;exercise&quot; the system in place.</td>
<td>The intervention &quot;capitalize[s] on the social cohesion available within military units&quot; and &quot;aims to facilitate peer and unit support&quot;</td>
<td>&quot;Perceived organisational support was strongly associated with those researchers who reported lower levels of end-line emotional distress&quot;</td>
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<tr>
<td>Grundlingh et al. (2017)</td>
<td>The current study was conducted &quot;with consideration for the parameters suggested by CISD proponents&quot;.</td>
<td>The intervention was &quot;tailored to violence researcher needs&quot; and a portion drawn from CISD techniques.</td>
<td>&quot;Perceived organisational support was strongly associated with those researchers who reported lower levels of end-line emotional distress&quot;</td>
<td>Positive associations with support from family and friends indicate &quot;that those with higher levels of distress were more likely to draw upon social networks.&quot;</td>
<td>&quot;Cultural norms … may have normalised the experience for these researchers and prevented significant emotional distress.&quot;</td>
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<tr>
<td>Gunasingam et al. (2015)</td>
<td>The protocol was designed by a senior health professional for the study.</td>
<td>&quot;Long working hours, poor work–life balance and the inability to commit to personal and social activities … associated with burnout&quot; in junior doctors.</td>
<td>Authors highlight need to address the following issues at organisational level: &quot;lack of support from senior staff, and ambiguity of future career progression&quot;. Supervisors who were seen as supportive were described with &quot;considerable appreciation&quot; while those who were unsupportive were were described in &quot;angry, resentful, and disappointed tones&quot;. Many distrusted &quot;whether...&quot;</td>
<td>Informal debriefing among colleagues were described as commonly employed tools &quot;to manage stress and prevent burnout&quot;.</td>
<td>The debriefing sessions were &quot;considered a valuable support mechanism&quot; but did not improve burnout scores.</td>
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<td>Halpern et al. (2009)</td>
<td>&quot;a context of an organizational culture that stigmatizes emotional vulnerability&quot;</td>
<td>&quot;Acknowledgement of the incident as critical&quot; and &quot;valuing the [staff's] work&quot; were among the factors perceived as beneficial during recovery.</td>
<td>Participants reported that &quot;knowing somebody cared enough to … connect&quot; or spending a timeout with peers was an important curative factor.</td>
<td>&quot;Perceived organisational support&quot;</td>
<td>&quot;Acknowledgement of the incident as critical&quot; and &quot;valuing the [staff's] work&quot; were among the factors perceived as beneficial during recovery.</td>
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<td>Harris et al. (2011)</td>
<td>Authors highlight the need &quot;to describe the exact nature and length of the debriefing; qualifications, experience, and quality of the debriefers; and the timing of the debriefing&quot;</td>
<td>The vocation in question &quot;exposes men and women to distressing sights, sounds, smells, and memories&quot;. Supportive organisational practices are crucial in this context.</td>
<td>The authors suggest that employee assistance programmes may be beneficial in protecting emergency personnel and should represent an occupational requirement.</td>
<td>Perceived social support from friends and colleagues were among the significant predictors of participants' mental health indexes.</td>
<td>&quot;emergency responders for the most part appreciate and are pleased with debriefings&quot;</td>
</tr>
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<td>Hunt et al. (2013)</td>
<td>The procedures were delivered using guidance provided by National Institute for Clinical Excellence</td>
<td>&quot;the chief constable approved the evaluation process&quot;</td>
<td>&quot;it may have been helpful for some individuals to speak to a colleague about their experiences, since social support has been shown to be useful&quot;</td>
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"management had their best interests in mind"
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<td>Hutton et al. (2010)</td>
<td>The protocol was based on CISD but instead of emergency response, it was applied to deal with responses to a child patient's death.</td>
<td>Some listed threats to loss of professional integrity and expectations as barriers to help-seeking.</td>
<td>The authors note that &quot;Support from nursing leadership is essential for the success of this type of intervention.&quot;</td>
<td>The &quot;most common strategy for paediatric nurses caring for dying children was to share their experiences with colleagues&quot;</td>
<td>&quot;Many evaluations noted how helpful it was to hear how other disciplines viewed what happened from their perspective&quot;</td>
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<td>Jones et al. (2017)</td>
<td>During deployment mental health care opportunities are limited and perceived barriers to care, such as stigmatization, appears to be heightened.</td>
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<td>&quot;TRiM is an acceptable intervention among military personnel as long as it is fully supported by military commanders&quot;</td>
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<td>Kenardy et al. (1996)</td>
<td>&quot;there was no standardization of debriefing services ... thus we do not know to what extent the stress debriefing matched [CISD]&quot;</td>
<td>&quot;Participants may fear that ...attendance at stress debriefing will stigmatize them and that they will be perceived as weak by their colleagues&quot;</td>
<td>&quot;Professional organizations involved in helping may have had debriefing as an integral component of their standard procedures&quot;</td>
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<td>&quot;Emergency service workers rated the debriefing as having considerable personal value&quot;; as &quot;Very&quot; or &quot;Extremely&quot; helpful</td>
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<td>Leonard &amp; Alison (1999)</td>
<td>&quot;the critical incident itself is less a feature of importance than the context within which it is received by the officer and those around him&quot;</td>
<td></td>
<td>Multiple officers commented on the lack of support offered by their department which significantly affected their ability to cope.</td>
<td>Officers &quot;used instrumental and emotional social support in conjunction with adaptive coping, focusing on and venting of emotions&quot;</td>
<td>Officers reported that the debrief gave their feelings meaning; made them believe the department cared; and helped to normalise their reactions.</td>
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<td>Macnab et al. (1998)</td>
<td>&quot;Each of the sessions followed the recommendations of Mitchell&quot;</td>
<td>The authors suggest that stress debriefing may only work for the emergency services and the application in other contexts may be &quot;inappropriate&quot;</td>
<td>Formal debriefing was made available to all employees. The authors highlight the need for &quot;psychological profile assessment during training&quot;</td>
<td>Participants &quot;used talking with a significant other, colleague, or friend&quot; as a method for managing stress.</td>
<td>The CISD team were perceived as unhelpful as the interest in staff welfare was seen as unusual for that organisation.</td>
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<td>Macnab et al. (2004)</td>
<td>The intervention followed principles of CISD. Screening was assessed over the phone.</td>
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<td>&quot;It was particularly crucial that the labour union ... was supportive of the study, as there always is the potential for distrust between the union and management&quot;</td>
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<td>Matthews (1998)</td>
<td>The intervention was &quot;based on the Mitchell model&quot;</td>
<td>Carers and nurses are often assaulted by patients. As a result, staff in direct care settings are particularly at risk of developing symptoms of PTSD.</td>
<td>The intervention was discussed regularly at staff meetings to ensure staff were aware of its availability. Managers were contacted for identifying participants.</td>
<td>Participants shared their individual methods for coping to help each other establish a variety of strategies.</td>
<td>&quot;CISD is usually evaluated positively by health care and emergency service workers&quot;. Over half felt that debriefing was helpful in reducing stress.</td>
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<td>Mitchell, Stevenson, and Poole (2000)</td>
<td>&quot;Group debriefing is the most frequent form of CISD although often, individual debriefing is offered based on need and practicality&quot;</td>
<td>&quot;the wider context of work needs to be considered when examining the impact of critical incidents&quot;</td>
<td>&quot;Support and recognition by supervisors during and after a threatening incident is crucial to subsequent psychological resolution&quot;</td>
<td>&quot;Discussing the facts ... following an incident, or in a CISD, provides a setting in which points of view can be shared and social support given and received&quot;</td>
<td>&quot;Officers appear to derive some psychological benefit from structured discussion following an incident&quot; in spite of its minimal effects on symptoms</td>
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<td>Robinson &amp; Mitchell (1993)</td>
<td>The debrief follows the guidelines as outlined in previously published research.</td>
<td>&quot;the management of trauma … needs to bear in mind predisposing and contextual job factors which may prepare the individual to manage trauma at work&quot;</td>
<td>&quot;Felt a common bond between members at the session.&quot;</td>
<td>Participants &quot;felt there was great value in the police and ambulance attending the debriefing, as we can all learn from one another&quot;</td>
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<td>Palgi et al. (2012)</td>
<td>&quot;Due to the problems with the debriefing technique, an alternative intervention was suggested.&quot; Emphasis was placed on preparing staff to deal with trauma.</td>
<td>Soldiers reported of multiple stressors that extended outside the conflict zone: “Two wars, outside and at home”</td>
<td>&quot;What mainly helps me is family and friends.&quot;</td>
<td>&quot;Everybody in that room became my brother or sister. The war blends/binds us together.”</td>
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<td>Regehr &amp; Hill (2001)</td>
<td>The intervention used draws upon common elements from several models of psychological debriefing including &quot;a psycho-educational group meeting&quot;.</td>
<td>Trauma “in emergency responders have a profound effect on… emergency service organizations to continue to be responsive to the needs of the public”</td>
<td>&quot;In times of cuts … in many emergency service organizations, the perception that someone cares… may be important to … well-being and job performance.”</td>
<td>&quot;The group modality allows for ventilation of feelings, encourages mutual aid within the organization and reinforces innate abilities to cope&quot;</td>
<td>&quot;Firefighters attending crisis debriefing groups felt that they were beneficial to them personally (86%) and assisted in reducing their level of stress (77%)&quot;</td>
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<td>Rick et al. (2006)</td>
<td>The “trauma care programme [was] adapted and developed in response to new latest research in the area”</td>
<td>Trauma management procedures had notably &quot;ceased because of staff changes and the transfer of trained managers to other jobs (as part of larger organisation wide change).”</td>
<td>&quot;those who felt more positive about the organisational support … following the traumatic incident also had significantly lower absence levels&quot;</td>
<td>&quot;social and emotional support delivered in an empathic manner is important in promoting recovery from PTSD&quot;</td>
<td>Participants reported a &quot;high degree of satisfaction with the support provided on the day of the incident&quot; which endured across time. ‘I felt the company cared about my well-being’</td>
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<td>Ruck et al. (2013)</td>
<td>For this intervention, a “form of debriefing based on the work of Mitchell and Everly (1996)”, however was adapted for use in the Prison Service.</td>
<td>“Prison Service workers are prone to develop trauma” from exposure to assault, riots, and deaths. The context prohibits use of RCTs due to ethical and legal concerns.</td>
<td>“It is reasonable to expect an employer to provide a safe environment for its employees, exposing staff to critical incidents without support could be viewed as negligent.”</td>
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<td>&quot;effective treatment...does not require complete remission of symptom severity but rather the development of core skills in the areas of emotion regulation&quot;</td>
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<td>Rudd et al. (2015)</td>
<td>“To maintain treatment fidelity, feedback was provided...to ensure that the therapists adhered to the brief CBT manual; both therapists achieved .90% fidelity ratings.”</td>
<td>Treatment in a military environment offers a number of unique challenges... In these circumstances, two primary issues are flexibility and brief duration, both of which are essential for successful implementation within the high-tempo, fluid, and unpredictable military system.</td>
<td>The organisation was involved in the coordination of identifying participants and scheduling follow-up assessments.</td>
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<td>Shalev et al. (1998)</td>
<td>The intervention followed a model previously used in the U.S. Army, but here applied to Israeli soldiers.</td>
<td>In the target population, there are a number of factors that may influence the intervention, for example the military rank of other participants. Thus military rank has to be suspended.</td>
<td>Commanding officers were involved in providing researchers with relevant information. Commanding officers also engaged participants with fact-finding debriefing beforehand.</td>
<td>'debriefing essentially resulted in the &quot;normalization&quot; of the group i.e., increasing similarity among group members and minimizing outliers'</td>
<td>&quot;effects may be attributable to enhancing group cohesion&quot;</td>
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|                         |                                                                           |                                                                                        |                                                                                                                                                                                                         |                                                                                                     | "sessions were followed by a sense of relief or a "spiritual purge."

"effects may be attributable to enhancing group cohesion"
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<td>Shoval-Zuckerman et al. (2015)</td>
<td>The intervention was based on a military stress debriefing protocol.</td>
<td>The current model was formulated after targeting the special needs of the reserve soldiers. This includes processing separation from unit members as well as family.</td>
<td>“group debriefing [was] consistent with the military tradition of after-action reviews”. The debriefing was co-delivered by the commander of the relevant military unit.</td>
<td>The intervention was based on the assumption that the military group provides a significant support network and source of strength.</td>
<td>Participants felt the debriefing had helped restore them to optimal functioning despite not improvement on PTSD symptom severity.</td>
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<td>Tehrani et al. (2001)</td>
<td>The authors highlight that “assessment tools designed for use in hospitals or laboratory settings” may inappropriate for use other workplaces.</td>
<td>The organisation was under pressure to “manage the health and well-being of their staff [and] run the retail operation during… one of the busiest times of the year”.</td>
<td>“There are important differences between workers…compared with the general population… Responders are aware of the danger and active in…managing the incident”</td>
<td>Employees said “that it was reassuring to hear the accounts of others involved in helping the injured passengers describing their experiences and responses.”</td>
<td>Debriefing is “valued by both debriefers and employees” even though “there is little evidence …to support it as an effective treatment”.</td>
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<td>Tuckey &amp; Scott (2014)</td>
<td>“Each intervention was led by one of two consultant mental health professionals who were trained and highly experienced in using the techniques”</td>
<td>“previous work [indicates] that disaster providers may themselves be in need of self-care as a result of direct and vicarious exposures to disaster stressors”</td>
<td>The intervention comprised participants from different occupations and organisations, and was delivered by an external research team.</td>
<td>“social networks [are] thought to be very important as group factors, including the climate for support influence psychological health outcomes”</td>
<td>“CISD may meet other needs (e.g., connecting with peer support, providing a bridge to later treatment) and/or be beneficial for…well-being and quality of life”</td>
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<td>Waelde et al. (2017)</td>
<td>Participants completed a home study programme following a previously validated manual. The “program was modified from its original format for use in disaster training.”</td>
<td>The intervention comprised participants from different occupations and organisations, and was delivered by an external research team.</td>
<td>The intervention comprised participants from different occupations and organisations, and was delivered by an external research team.</td>
<td>“participants were very satisfied with the training and had high expectancies that this mindfulness program would be useful for both survivor and self-care”</td>
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<td>Wu et al. (2012)</td>
<td>“The debriefings were based on the CISD protocol” but were modified to include a “cohesion training section”. Protocol adherence was assessed by a rating system.</td>
<td>The model was developed to cater to &quot;the unique characteristics of Chinese military rescuers&quot; in particular; unit cohesion differentiates them from other emergency response.</td>
<td>While not part of standard training, the authors highlight the potential benefits of &quot;conducting and practicing such training at subsequent times&quot; e.g. during pre-deployment.</td>
<td>&quot;They have a strict hierarchy and each belongs to a specific squad, platoon and company. Therefore, the relationship...is much closer than other rescue groups”</td>
<td>Participants reported that &quot;mutual support was a highlight of this group experience”.</td>
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<td>Young &amp; Parr (2004)</td>
<td>“Each treatment group included a peer officer who was trained in the CISM and CISD models”</td>
<td>Some participants reported being &quot;mildly teased about their participations&quot; indicating a culture of stigma around help-seeking within the police forces.</td>
<td>The debriefing occurred between shifts, sometimes away from the department. &quot;Police cadet training briefly covers posttraumatic stress ... but is limited in scope”</td>
<td>&quot;Teaching occurred from officer to officer… This interaction seemed especially effective and helpful and also built a sense of group cohesion&quot;</td>
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Appendix D – Glossary of acronyms.

Interventions
Critical Stress Driefing (CISD)
Stress Management Class (SMC)
Survey only (SO)
Multiple Stressor Debriefing (MSD)
Trauma-focused cognitive behavioural therapy (TF-CBT)
Compass focused therapy (CFT)
Brief Eclectic Psychotherapy (BEP)
Structured Interview for PTSD (SI-PTSD)
Cognitive Processing Therapy (CPT)
Trauma Risk Management (TRiM)
Support Post Trauma (SPoT)
512 Psychological Intervention Model (512 PIM)

Measures
Posttraumatic Stress Disorder Checklist (PCL)
Heart Rate (HR)
Perceived Organisational Support (POS)
Depression (CES-D)
Aggression (CTS)
Subjective Units of Distress (SUDS)
Hospital Anxiety and Depression Scale (HADS)
Impact of Events Scale (IES)
Self-Compassion Scale (SCS)
Credibility (CS)
Posttraumatic Stress Diagnostic Scale (PDS)
Debriefing Attitudes Scale (DAS)
Posttraumatic Stress Symptoms (PTSS)
Non-traumatic Deployment Stressors (NTDS)
Patient Health Questionnaire Depression Scale (PHQ-9)
World Health Organisation Quality of Life Assessment - Brief Version (WHOQOL)
Combat Experiences Scale (CES)
Peritraumatic Distress Inventory (PDI)
Peritraumatic Dissociative Experience Questionnaire (PDEQ)
Social Adjustment Scale (SAS)
Self-Rating Scale for PTSD (SRS-PTSD)
Anxiety Disorders Schedule (ADIS)
Beck Depression Inventory (BDI)
General Health Questionnaire (GHQ)
Symptoms Checklist (SCL)
Resilience Scale (RS)
Thai Mental Health Indicator (TMHI)
Behavioural Health Measure (BHM)
Posttraumatic Symptom Scale (PSS)
Clinician-Administered Post-Traumatic Stress Scale (CAPS)
Michigan Alcohol Screening Test (MAST)
Self-Report Questionnaire (SRQ)
Vicarious Trauma Scale (VTS)
Secondary Traumatic Stress subscale (STS)
Maslach Burnout Inventory (MBI)
Ways of Coping Questionnaire (WOCQ)
Perceived Social Support Scale (PSSS)
World Assumptions Scale (WAS)
Alcohol Use Disorders Identification Test (AUDIT)
State-Trait Anger Expression Inventory (STAXI)
Stanford Acute Stress Reaction Questionnaire (SASRQ)
Life Impact Score (LIS)
Schedule of Recent Events (SRE)
Everstine Trauma Response Index (ETRI)
Pressure Management Indicator (PMI)
Modified PTSD Symptom Score (MPSS)
Standardised Trauma Interview (STI)
Childhood Trauma Questionnaire (CTQ)
Immediate Stress Reaction Checklist (ISRC)
PTSD Symptom Scale, Interview Version (PSS-I)
Suicide Attempt Self-Injury Interview (SASI)
Beck Scale for Suicide Ideation (BSSI)
Beck Anxiety Index (BAI)
Beck Hopelessness Scale (BHS)
State Anxiety Inventory (STAI)
Peritraumatic Dissociation Experiences Questionnaire (PDEQ)
Perceived Social Support-Friends (PSS-F)
Self-Efficacy Questionnaire (SELF-C)
Combat Exposure Scale (EXP)
Combat Evaluation Scale (CEV)
Psychotherapy Outcome Assessment and Monitoring System - Trauma Version (POAMS-TV)
Structured Interview for PTSD (SI-PTSD)
Appendix E – Full references to studies included in this review.


Harris, M., Baloglu, M., Stacks, J. (2011). Mental health of trauma-exposed firefighters and critical incident stress debriefing. *Journal of Loss and Trauma, 7*, 223-238, 10.1080/10811440290057639


Macnab, A., Sun, C., Lowe, J. (2004). Randomized, controlled trial of three levels of critical incident stress intervention. *Prehospital and Disaster Medicine, 18*, 367-371, 10.1017/s1049023x0001333


