EXPLORING EARLY POST-TRAUMA INTERVENTIONS FOR EMPLOYEES THAT EXPERIENCE TRAUMA AT WORK

by

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Overview

Thesis Overview

The Literature Review

A meta-analysis examined the effectiveness of early-post trauma interventions for people's psychological distress after they experienced trauma at work. Inconsistent research highlighted the dilemma faced by organisations who supported their employees with early post-trauma interventions which wanted for empirical support. Twenty articles contributed to the meta-analysis. The results suggested that early post-trauma interventions significantly improved employees' outcomes for depression and anxiety. No significant findings were found for the outcomes of substance misuse or quality of life. The current meta-analysis contributed to the increasing empirical support for early post-trauma interventions. However, this support requires cautious interpretation due to the limitations and inconsistency of the available research.

The Empirical Research Paper

The empirical research paper explored mental health practitioners' experience of Trauma Risk Management (TRiM), an early post-trauma intervention. Limited qualitative research left understanding into people's experiences of these interventions seldom explored. Interviews of mental health practitioners' experiences of TRiM were analysed using Interpretative Phenomenological Analysis. Findings suggested that participants experienced significant trauma reactions without disclosing this distress at work. Participants described valuing acknowledgement and appreciation of their role in the event, and some grew from the trauma. Making sense of the trauma during the TRiM process appeared to help practitioners organise the trauma memory and create new perspectives, lessoning their shame and guilt related to the trauma. Practitioners described peer-delivered intervention facilitated sharing

their experiences, however, for some this familiarity left them unable to disclose the extent of their distress. The research, therefore, increased understanding into mental health practitioners' experience of TRiM.

The Research

Chapter One: The Literature Review: The Effectiveness of Early Post-trauma Interventions On Employees' Psychological distress After Experiencing Trauma at Work.

Chapter Two: The Empirical Paper: Mental Health Practitioners' Experience of Trauma Risk Management.

Chapter Three: Public Dissemination of the Thesis.

Dedication

I would like to dedicate my thesis to my mum. Mum passed away on 17th July 2021, at the age of 61, and so she cannot see me finish the doctorate on this earthly plane. Mum gave so much to me throughout my life to get me to this point. Mum was always so proud of me, my education and career. A pride I want to keep with me as I finish this doctorate and become a qualified psychologist. Mum would have been excited to finally tell people there's a doctor in the family! Something my dad had already started telling people when I started the doctorate…

Acknowledgements

I wish to firstly thank my mum, dad, brother, and sister-in-law for their unrelenting love and support through-out my career and especially during the doctorate where we endured much turmoil.

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I wish to thank my research supervisors, Lizzie Newton and Chris Jones, who have guided me through the exciting, exasperating, and, at times, all-consuming journey of my thesis.

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Trauma Risk Management (TRiM)

Trauma Incident Briefing (TIB)

1. THE LITERATURE REVIEW: THE EFFECTIVENESS OF EARLY POST-TRAUMA INTERVENTIONS ON EMPLOYEES' PSYCHOLOGICAL DISTRESS AFTER EXPERIENCING TRAUMA AT WORK

Abstract

Aim

Research into the effectiveness of early post-trauma interventions for people who experience trauma at work remains limited and unclear. Organisations appeared left in a dilemma of supporting employees' exposed to trauma with little empirically supported guidance on the provision of early post-trauma interventions. The current meta-analysis, therefore, aimed to examine the effectiveness of these interventions on employees' psychological distress after exposure to trauma.

Method

Study eligibility criteria involved studies that examined employees' who experienced a traumatic event at work and consequently received an early-post trauma intervention within the organisation. The outcomes measured constructs related to psychological distress. Participants included employees within the military, emergency response services, police and prison services, and retail. Twenty articles were included in the analysis. A Risk of Bias Assessment frame was applied to assess the studies' methodological quality.

Results

The early post-trauma interventions significantly improved employees' outcomes of depression (SMD = 0.1860, 95% CI 0.03 to 0.34) and anxiety (SMD = 0.28, 95% CI 0.12 to 0.44) compared to no intervention. There were no significant results for the interventions' effect on substance misuse (SMD = -0.1103, 95% CI -0.27 to 0.05), or general psychological health (SMD = 0.05, 95% CI -0.10 to 0.20). The quality effects model suggested that the methodological quality of the primary studies did not adversely impact the meta-analysis.

Conclusion

This meta-analysis added to increasing empirical support for early post-trauma interventions for people experiencing trauma at work. However, this support should be interpreted with caution due to the limitations and inconsistency of the research available.

Introduction

Employees' Experience of Trauma at Work

Trauma is an emotional response to distressing and life-threatening events. Such events include serious accidents, physical or sexual violence, and witnessing or discovering the death or serious injury of other people (Kessler et al., 2017). Internationally, 70% of people have reported experiencing traumatic events in their lifetime (Kessler et al., 2017). Traumatic events can occur in the workplace, which employees directly experience, witness, or become aware of. Official statistics for the year 2019/2020 indicate significant numbers of employees experienced non-fatal and fatal injury at work, and experienced violence (Health and Safety Executive, 2020). Trauma at work can be expected and a part of the work, e.g., through combat exposure in the military (Porter, Hoge, Tobin, Donoho, Castro, Luxton & Faix, 2018), or emergency response services attending to situations involving the death or serious injury of others (MacEachern, Jindal-Snaps, & Jackson, 2011). Trauma can also be unexpected at work, for instance, violence at work (Price, Baker, Bee & Lovell, 2015), or employees' not a part of emergency services witnessing and attending to people seriously or fatally hurt in accidents (Tehrani, Walpole, Berriman & Reilly, 2001).

Exposure to a traumatic event can prompt shock, fear and horror (Paton & Violanti, 2011). Many people also experience psychological distress afterwards, such as sleep difficulties, distressing thoughts and memories, nightmares, irritability, feelings of helplessness and reliving aspects of what happened (van der Kolk, 2000). The trauma response subsides for most people, but for some the psychological distress continues and can develop into sustained mental health difficulties, including Post-traumatic Stress Disorder (PTSD), anxiety, depression, suicidal behaviours, maladaptive coping strategies (e.g., drug and alcohol abuse) and compassion fatigue within their working role (Carleton, et al., 2018;

Huddlestone, Paton, & Stephens, 2006; Stanley, Hom & Joiner, 2016). Hence, the deleterious effects of experiencing trauma at work highlights organisation's moral, as well as legal, duty to support employees' who are exposed to potentially traumatic events (The Management of Health and Safety at Work, 1999; UK Psychological Trauma Society, 2014).

Early Post-trauma Interventions

Early post-trauma interventions offer one way in which organisations attempt to mitigate risks associated with exposure to traumatic events for employees. Specific models for early post-trauma interventions include Psychological First Aid (Hobfoll, Watson, Bell, Bryant & Brymer, 2007), Critical Incident Stress Intervention (CISD; Mitchell, 1983), Psychological Debrefing (Dyregov, 1989), Critical Incident Stress Management (Everly & Mitchell, 1999), and Trauma Risk Management (Jones, Roberts, & Grennberg, 2003). The pervading theme across the early post-trauma interventions pertain to easing psychological distress following exposure to trauma (Raphael & Wilson, 2000). To mitigate psychological distress, early post-trauma interventions apply crisis intervention and educational processes to explore the traumatic event, people's feelings, and their future planning and coping (Richins et al., 2019).

Currently, NICE guidance recommends against the use of early post-trauma interventions for the treatment of PTSD (NICE, 2018). This recommendation was based upon research which has since been criticised as methodologically flawed, undermining the conclusion drawn that these interventions detrimentally impacted people's mental health (Richins et al., 2019). The NICE guidance, nonetheless, appeared to have stoppered early post-trauma intervention research and precluded establishment of best-practice guidance (Hawker, Durkin & Hawker, 2011). Consequently, organisation's appear left in a dilemma of

how to support their employees' exposed to traumatic events with little empirically supported guidance on the provision of early post-trauma interventions.

Outcomes of Previous Meta analyses and Literature Reviews

The recognition that flawed research informed the NICE recommendations and limited best-practice guidance led to renewed effort to understand the effectiveness of early post-trauma interventions (Richins, et al., 2019). Little clarity, however, remains regarding how to fully capture the relevant outcomes for early post-trauma interventions (Richins et al., 2019). Previous meta-analyses have focused on the effectiveness of these interventions for PTSD (Lewis, 2003; Maglione et al., 2021; Rose, Bisson, Churchill, & Wessley, 2002). Other meta analyses have focused on the effectiveness of these interventions for vicarious trauma (Everly, Boyle & Lating, 1999), and the effectiveness of single session interventions (van Emmerik, Kamphuis, Hulsbosch & Emmelkamp, 2002). Additionally, literature reviews have focused on the effectiveness of a wide range of early post-trauma interventions (Richins, et al., 2019), specifically Critical Incident Stress Management (Flannery, George & Everly, 2004). Other reviews have focused on the effectiveness of these interventions specifically for public safety and frontline healthcare employees (Anderson, Di Nota, Groll & Carleton, 2020).

Paralleling the diverse range of research, the evidence available to evaluate the effectiveness of early post-trauma interventions remains inconsistent. Across meta-analyses and literature reviews, findings both support (Everly et al., 1999; Flannery et al., 2004; Richins et al., 2019) and denounce (Lewis, 2003; Maglione et al., 2021; Rose, Bisson, Churchill, & Wessley, 2002) the effectiveness of early post-trauma interventions in reducing a range of psychological distress, e.g., PTSD, anxiety, depression, and stress.

Authors of these studies acknowledged that the inconsistent quality of studies and outcome measures used precluded and limited quantitative analyses. A possible reason why these studies have too little data may be due to their focus on specific interventions or population groups. For instance, Anderson et al's (2020) focus on public health and frontline healthcare employees excluded the notable literature within the military (Whybrow, Jones & Greenbery, 2015). Another possible reason may be the focus on the outcome of PTSD despite early post-trauma interventions not being designed to prevent or treat PTSD (Dyregrov & Regal, 2012; Ruck et al., 2013). There appeared more to the effectiveness of early post-trauma interventions than the objective measure of PTSD (Richins et al., 2019). Due to the limited research, many of the authors recommended further research to provide more specific and precise analyses for the various outcomes captured within the literature.

Rationale for this Meta-analysis

The research into the effectiveness of early post-trauma interventions remains unclear. This lack of clarity appears firstly due to a heterogeneous body of literature separately examining various early post-trauma interventions with various occupational groups (Anderson et al., 2020; van Emmerik, et al., 2002). Such restricted focus fails to capture the large scope of occupations and interventions within the literature, and subsequently limits the generalisability of the findings. Secondly, while one previous review included wide-ranging interventions and occupational groups, the analyses remained limited to a meta-ethnography (Richins et al., 2019), therefore, restricting empirical clarity of the effectiveness of these interventions. The meta-analyses that assisted in establishing empirical clarity, however, proved dated (Everly et al., 1999; van Emmerik et al., 2002). Hence, there appears a need for an up-to-date statistical integration of the literature that encapsulates the wide-ranging nature of the occupations that encounter trauma at work, the early post-trauma interventions used,

and the different mental health outcomes of those interventions. Of note, current focus on examining the effectiveness of these interventions with PTSD is explored in a separate study.

Aims of this Meta-analysis

The current meta-analysis aimed to examine the effectiveness of early post-trauma interventions on employees' psychological distress after they have been exposed to a potentially traumatic event at work.

Method

Identifying Primary Studies

Search of Electronic Databases

A systematic literature search using the databases 'Psychinfo', 'EMBASE' and 'Medline' was conducted on 3rd September 2021. The search aimed to gain a comprehensive overview of the literature into the effectiveness of early post-trauma interventions on people's psychological distress after experiencing a traumatic event at work. Table 1 outlines the search terms used to find the studies. To encapsulate the current aims of the review, the broad constructs identified were 'early post-trauma intervention', 'psychological distress' and 'organisation'. These broad constructs were deconstructed into search terms through exploring keywords within the relevant literature and considering the different types of mental health difficulties congruent with trauma. Limits to the search were used to enhance the quality and the homogeneity of the papers found.

Table 1

Search Criteria for Identifying Primary Studies

Construct	Free Text Search Terms	Method of Search	Limits
Early post-trauma interventions	'early post-trauma intervention*' 'debrief*' 'psychological debrief*' 'critical incident stress debrief*' 'CISD' 'critical incident stress intervention*' 'trauma risk management' 'TRiM'	Free search terms. All search terms within constructs combined with *'OR'*. All constructs combined with *'AND'*.	Peer reviewed Psychinfo: 1967 – August 2021 Medliner: 1946 – August 2021 EMBASE: 1974 – August 2021
Psychological Distress	'AND' 'psychological distress' 'distress' 'stress' 'post-trauma* stress' 'post-trauma* distress' 'PTSD' 'depression' 'trauma' 'psychological health' 'mental health' 'anger' 'aggression' 'anxiety' 'psychiatric morbidity'	All terms exploded.	English language
Organisation/ employees'	'AND' 'organisation*' 'employ*' 'staff*' 'work*' 'emergency service*' 'emergency responder*' 'healthcare' 'firefighter*' 'military' 'armed forces' 'solider*' 'peacekeeper*' 'police' 'law enforcement'		

Note: 'AND'/'OR' are Boolean operators.

Inclusion criteria

Table 2 displays the inclusion/exclusion criteria used for the literature search. The main inclusion criteria involved studies focusing on employees' who experienced a potentially traumatic event at work, who then received an early-post trauma intervention for the event within the organisation they worked in. The outcomes also needed to measure constructs related to psychological distress.

Table 2

Inclusion and Exclusion Criteria

Inclusion/Exclusion Criteria	**Justification**
Participants	
Experienced trauma during, or as part of, their work (expected or unexpected).	To enhance the internal validity of the meta-analysis by excluding organisational support offered to employees' regarding trauma external to work.
The trauma was a discrete event that potentially prompted a psychological trauma response.	To enhance the internal validity of the meta-analysis by excluding support for general stress/distress at work. And to comprehensively examine psychological trauma at work as opposed to only physical trauma.
Occupational sample only, student/civilian samples were excluded.	To include data relevant to the meta-analysis, and to exclude student/civilian samples receiving interventions without exposure to a traumatic event at work.

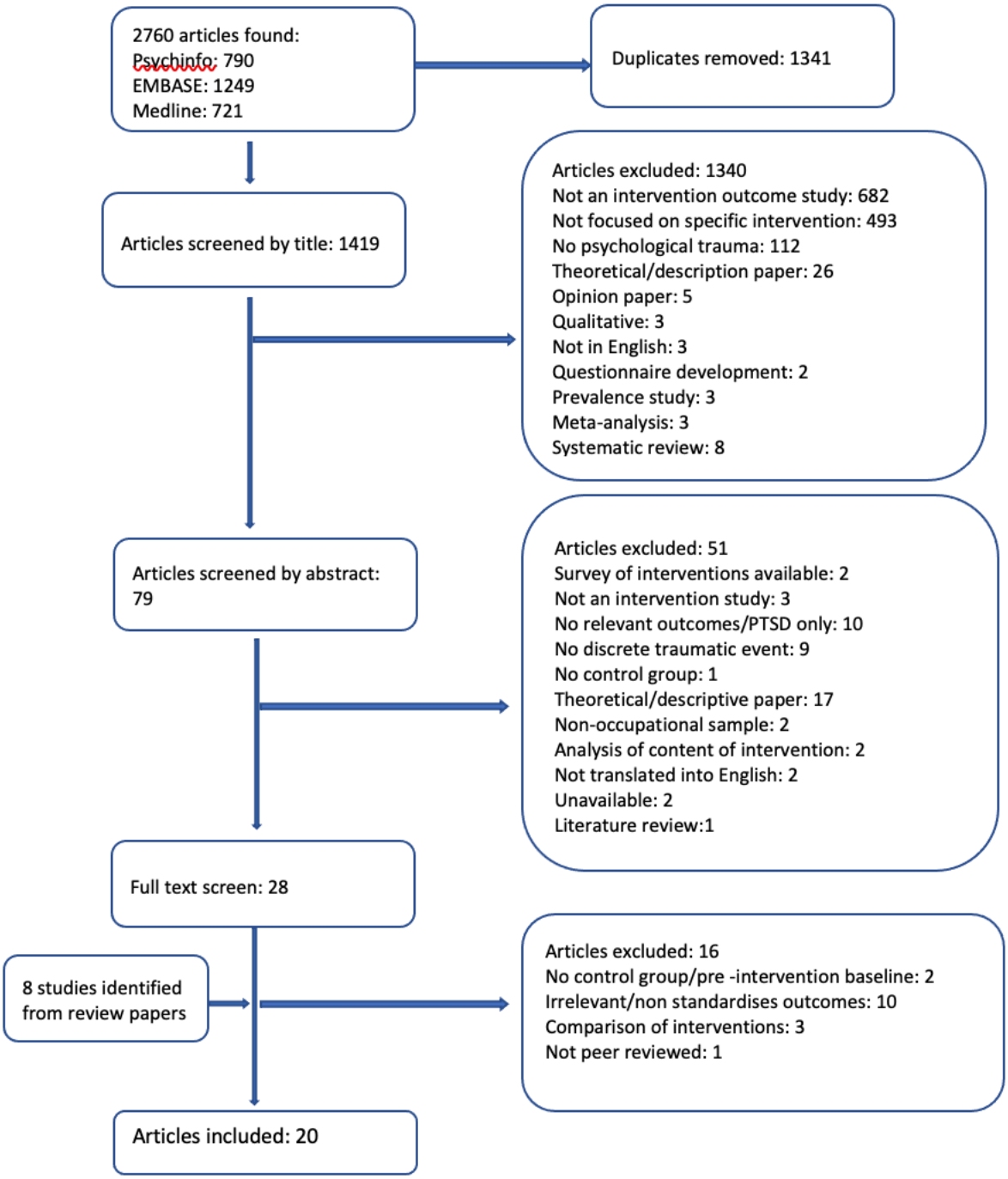
Inclusion/Exclusion Criteria	Justification
Type of article	
Meta-analyses, reviews, theoretical or evaluative papers, study protocols, opinion papers, non-outcome focused studies, case studies were excluded.	These articles do not provide the data required for the current meta-analysis.
Studies from any year will be included.	This is to capture all interventions that may have preceded the initial models established, e.g., CISD (Mitchell, 1983).
Intervention	
Offered within the organisation, using both internal and external facilitators, but not externally resourced interventions.	To ensure internal validity of the meta-analysis, only studies exploring interventions offered within the organisation rather than externally resourced interventions, e.g., independent/private therapists.
The intervention was in response to a traumatic event. Studies examining pre-trauma interventions were excluded.	This is to ensure internal validity of examining interventions that subsequent trauma experienced by employees, as opposed to interventions offered in anticipation of employees' experiencing trauma at work.
Used a specific intervention, e.g., CISD, TRiM, studies using general interventions to trauma exposure were excluded.	This is to ensure internal validity of the analysis so specific early post-trauma interventions can be examined.
Outcome measure	
Examines mental health outcomes. Studies solely examining post-traumatic stress disorder were excluded.	This reflects the heterogenous nature of psychological distress explored within the literature. The clinical aims of early post-trauma interventions have also had much debate and remain unclarified (Richins et al., 2019).

Inclusion/Exclusion Criteria	**Justification**
Studies using standardised outcome measures.	This is to ensure the reliability and validity of the measurement of the outcomes related to psychological distress.
Outcome data	
Studies reporting Means and Standard Deviations, F-Test statistics, or a Cohen's *d* or *r* effect size, i.e., quantitative studies. Qualitative studies were excluded.	To ensure that the data can be calculated into an effect size. Qualitative studies do not provide the data required for this analysis.
Studies without a control group or baseline data were excluded.	This is to enhance the methodological rigour of the studies included in the analysis.

Figure 1 displays the results of the systematic search. The search yielded 2760 articles before duplicates were removed, leaving 1419 articles. Using the inclusion/exclusion criteria, the articles' titles and abstracts were screened in succession. The three most common reasons for exclusion upon considering the articles' titles were no examination of an intervention (n = 682), or no examination of a specific intervention (n = 493), for instance, weekly well-being sessions, and articles' focusing on physical trauma only (n = 112). The main reason for exclusion when reviewing the abstracts was theoretical articles or descriptions of interventions (n = 17). After fully screening the remaining 28 articles, sixteen were further removed due to comparing interventions (e.g., Tarquinio et al., 2016), attaining no standardised outcome measures (Hunt, Greenberg & Jones, 2013), or providing irrelevant outcomes, such as attitudes of employees' trained in an intervention (Gould, Greenberg, & Hetherton, 2007), for example. Hence, 20 studies met the inclusion criteria for the current meta-analysis.

Figure 1

Results of the Systematic Search and Application of Inclusion/Exclusion Criteria



Data Extraction

All data were extracted by the corresponding author. The author anticipated that the intervention outcomes were reported as a mean or mean difference, a standard deviation, with separate sample sizes for the treatment and control groups. If standard deviations were not reported individually then the pooled standard deviation would be substituted. If means, standard deviations and sample sizes were not reported then Student *t* or *F* statistics would be transformed into estimates of Cohen's *d.* Lastly, if both summary statistics or *t* or *F* statistics were not reported then effect sizes as reported in the primary studies were considered. Of note, effects sizes reported in primary studies tend to be calculated from data adjusted for the association with one or more covariates. These adjustments emphasise the idiosyncratic character of the reported effect and may result in dissimilarity with the effects reported in the other primary studies. Empirical examination of the contribution of adjusted effect size to overall heterogeneity would occur if problematic heterogeneity is identified in the random effects model.

Primary studies may report multiple measures of the same outcome or report the same outcome measure in multiple subgroups. Where possible, multiple outcomes were combined to a single outcome using procedures described by (Borenstein et al., 2009). If combining of outcomes proved not possible, then multiple effects would have been included in the meta-analysis. Including multiple reporting of outcomes from the same primary study can result in reduced confidence intervals for the random effects model, because the sample size of that primary study will be included twice. Inevitably, due to the current meta analyses exploring separate outcomes, e.g., depression and anxiety, there will be reduced confidence intervals for the random effects model. Analysing separate outcomes allowed for exploration of potential

differences between the various components of psychological distress observed in people attending early post-trauma interventions.

Defining Problematic Variance

Heterogeneous study level effects includes variation from the meta-analysis synthesis which cannot be attributed to true variation in the distribution of effect in the population. Heterogeneity tends to occur from methodological variation in the studies, uncontrolled individual difference factors within the literature, or measurement of error. A common measure of heterogeneity is Higgins I^2 , in which greater values indicate variation in effect not attributable to true variation in the distribution of effect in the population. Accounting for the substantial variation in the primary studies methodologies, problematic heterogeneity was defined using a Higgins I^2 value greater than 75%. Upon an unacceptable or problematic heterogeneity then the subsequent analyses would have included the identification of the sources of heterogeneity between the estimates of psychological distress in the primary studies.

Risk of Bias Assessment

A framework of quality criteria was developed to assess risk of bias within the primary studies. This criteria was adapted from existing frameworks, such as The Cochrane Collaboration Risk of Bias Tool (Higgins et al., 2011), and the Risk of Bias Assessment Tool for Nonrandomised Studies (Kim et al., 2013). As shown in Table 3, the current risk of bias assessment framework applied a rating of low, unclear or high risk of bias across seven domains: selection bias, performance bias, treatment fidelity, detection bias, statistics bias, reporting bias and generalisation. Table 4 then displays the ratings for each primary study used within the meta-analysis. Due to the variation in the studies use and reporting of

outcome measures, multiple ratings for each study were applied to denote the different outcome measures reported within each study.

Table 3

The Risk of Bias Assessment Framework

Risk Domain	Explanation of Risk	Description of Ratings
Selection Bias	Systematic differences between baseline characteristics of the groups that are compared.	High Risk Includes an unacceptable (reporting less than 30% of the data) level of non-response rate. Target sampling was used. Experimental and control arms were from different populations The characteristics of the study population were not reported. Unclear Risk Non-response rate was not reported. The characteristics of the study population were not clearly reported. For example, the country, setting, location, population demographics were not adequately reported. The recruitment process/ sampling method of individuals were unclear or had not been reported. Convenience sampling was used. Low Risk The characteristics of the study sample were clearly described and without evidence of bias. Non-response rate was reported and of an acceptable level (set at 50%). The source population was well described, and the study reported the characteristics of the sample e.g. the study details subgroups. The recruitment method was clearly reported and well defined. The article provides some reassurance that there was no selection bias (e.g. allocation concealment).

Risk Domain	Explanation of Risk	Description of Ratings
Performance Bias	Systematic differences between/within groups in the participants motivation to complete the study or in exposure to factors other than the interventions of interest.	High Risk Responses were not confidential or anonymous. Participants were rewarded for their participation in the study. Participants were not blinded. Participants were told which condition/what questionnaires they were completing and why, and any proposed hypotheses. Unclear Risk The study did not report levels of confidentiality and anonymity. It is not clear if participants were rewarded for their participation (e.g. motivation to respond in a certain way). It is unclear how much information was provided to the participant prior to taking part in the study. Low Risk Study reported level of confidentiality and anonymity. Participants were not rewarded for their participation in the study Information and procedures were provided in a way that does not differentially motivate participants. Participants were blinded to the treatment condition.
Treatment Fidelity	The extent to which the treatment is delivered competently and as intended and is representative of the class of treatments to which the study intends to generalise.	High Risk The treatment provided was different than the intended treatment. Treatment provided was inconsistent between participants. Unclear Risk Treatment protocol was unclear or has not been reported. Low Risk Treatment was sufficiently well described that it could be replicated. Treatment corresponded to intended treatment described in the methodology. Procedures were in place to assess the fidelity of administered treatment.

Risk Domain	Explanation of Risk	Description of Ratings
Detection Bias	Systematic differences between participants in how outcomes are determined. The extent to which the study design is optimised to detect the effect in questions.	High Risk The outcome measures were implemented differently across participants. The outcome measures used had poor reliability and validity reported e.g., Cronbach's Alpha < 0.6. Only using one dimension/subscale of the scale or separating the subscales/dimensions in the analysis. Unclear Risk Information regarding the outcome measures were either not reported or not clearly reported e.g. definition, validity, reliability. Outcome measure had questionable psychometric properties (e.g., Cronbach's Alpha was between 0.6 and 0.7) It was not clear if the measure was implemented consistently across all participants. The research question was unclear. Low Risk The outcome measures were clearly defined, valid and reliable (e.g., Cronbach's Alpha > 0.7), and were implemented consistently across all participants. Outcomes were blindly rated (when an alternative to self-report measures have been used).
Statistical Bias	Bias resulting from the inappropriate statistical treatment of the data. This includes using completer-only analysis rather than intention-to-treat or other methods for inputting missing data.	High Risk Statistics were not reported. Wrong statistical test was used and not appropriate for the study design. Attrition rate: data loss was reported at analysis at an unacceptable level (>30%) Unclear Risk Unclear what statistical test was used. Confidence intervals or exact *p*-values for effect estimates were not reported and could not be calculated. Attrition rate: data loss was not reported at analysis. Low Risk Appropriate statistical testing was used. Confidence intervals or exact *p*-values for effect

Risk Domain	Explanation of Risk	Description of Ratings
		estimates were given or possible to calculate. Attrition rate – data loss was reported at analysis at an acceptable level (5%) and appropriate method used for inputting missing data.
Reporting Bias	Systematic differences between reported and unreported findings (e.g. selective reporting of statistically significant findings).	High Risk Not reporting full outcome measures that were stated in the method section/ reported only a subsample of results/only significant results/not reported the measure as it should be. Unclear Risk Not all descriptive and/or summary statistics were presented. There is a description (narrative) in the results but did not record statistics. Low Risk Reported all results of measures as outlined in the method. Reasons for attrition or exclusions were reported
Generalisability	The extent to which the sample represents the target population from which it was drawn.	High Risk Small sample (10-20 per arm) with or without idiosyncratic feature. Sample not representative of wider profession. The sample size was not adequate to detect an effect. Unclear Risk 20-30 participants per arm. Idiosyncratic features in sample. A sample size justification, estimate or power analysis were not provided Low Risk Sufficient sample size (35+ per arm) and representative of target population. A sample size justification, estimate or power analysis was provided.

The application of these risk of bias criteria to the included studies is shown in Table 4. Table 4 also contains the 'quality score'. This score is calculated by awarding two points

for each area of bias rated as “low risk” and one point for each area of bias rated as “unclear risk”. The sum of points awarded for risk of bias is then expressed as a percentage of the maximum number of points a study could have scored.

Table 4

The Methodological Quality of the Primary Studies

Study	Outcome	Outcome time	Selection Bias	Performance Bias	Treatment Fidelity	Detection Bias	Statistical Bias	Reporting Bias	Generalisability	Overall Quality Index
Adler et al. 2008 (a)	Depression	Medium term	Low risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	91%
Adler et al. 2008 (b)	Depression	Long term	Low risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	91%
Adler et al. 2008 (c)	Anger	Medium term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Adler et al. 2008 (d)	Anger	Long term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Adler et al. 2008 (e)	Support	Medium term	Low risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	91%
Adler et al. 2008 (f)	Support	Long term	Low risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	91%
Adler et al. 2008 (g)	Substance misuse	Medium term	Low risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	91%
Adler et al. 2009 (a)	Psychological health	Medium term	Low risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	91%
Adler et al. 2009 (b)	Sleep	Medium term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Adler et al. 2009 (c)	Stigma	Medium term	Low risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	91%
Carlier et al. 2000	Anxiety	Short term	High risk	High risk	Low risk	Low risk	Unclear risk	Low risk	Low risk	66%
Deahl et al. 1994	Psychological health	Long term	Unclear risk	High risk	Unclear risk	Low risk	Unclear risk	Low risk	Unclear risk	64%
Deahl et al. 2000 (a)	Depression	Short term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Deahl et al. 2000 (b)	Depression	Medium term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Deahl et al. 2000 (c)	Depression	Long term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Deahl et al. 2000 (d)	Anxiety	Short term	Unclear risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	86%
Deahl et al. 2000 (e)	Anxiety	Medium term	Unclear risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	86%
Deahl et al. 2000 (f)	Anxiety	Long term	Unclear risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	86%
Deahl et al. 2000 (g)	Psychological health	Short term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Deahl et al. 2000 (h)	Psychological health	Medium term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Deahl et al. 2000 (i)	Psychological health	Long term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Deahl et al. 2000 (j)	Substance misuse	Short term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Deahl et al. 2000 (k)	Substance misuse	Medium term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Deahl et al. 2000 (l)	Substance misuse	Long term	Low risk	High risk	Low risk	Unclear risk	High risk	Low risk	Low risk	89%
Harris et al. 2011 (a)	Support	Not described	Unclear risk	Unclear risk	High risk	Unclear risk	Low risk	Unclear risk	Low risk	64%
Harris et al. 2011 (b)	Self	Not described	Unclear risk	Unclear risk	High risk	Unclear risk	Low risk	Unclear risk	Low risk	64%
Harris et al. 2011 (c)	Coping	Not described	Unclear risk	Unclear risk	High risk	Unclear risk	Low risk	Unclear risk	Low risk	64%
Harris et al. 2011 (d)	Depression	Not described	Unclear risk	Unclear risk	High risk	Unclear risk	Low risk	Unclear risk	Low risk	64%
Harris et al. 2011 (e)	Anxiety	Not described	Unclear risk	Unclear risk	High risk	Unclear risk	Low risk	Unclear risk	Low risk	64%
Kenardy et al. 1996 (a)	Psychological health	Medium term	High risk	High risk	High risk	Low risk	Low risk	Low risk	Low risk	64%
Kenardy et al. 1996 (b)	Psychological health	Long term	High risk	High risk	High risk	Low risk	Low risk	Low risk	Low risk	64%
Leanard & Alison. 1999 (a)	Coping	Not described	Unclear risk	High risk	Unclear risk	Unclear risk	Low risk	Low risk	Unclear risk	64%
Leanard & Alison. 1999 (b)	Anger	Not described	Unclear risk	High risk	Unclear risk	Unclear risk	Low risk	Low risk	Unclear risk	64%
Regehr et al. 2000	Depression	Short term	Unclear risk	High risk	High risk	Low risk	Unclear risk	Low risk	Low risk	64%
Ruck et al. 2013 (a)	Anxiety	Short term	High risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	64%
Ruck et al. 2013 (b)	Depression	Short term	High risk	High risk	Low risk	Low risk	High risk	Low risk	Low risk	64%
Shalev et al. 1998 (a)	Self	Short term	High risk	High risk	Unclear risk	Low risk	Low risk	Low risk	Unclear risk	41%
Shalev et al. 1998 (b)	Anxiety	Short term	High risk	High risk	Unclear risk	Low risk	Low risk	Low risk	Unclear risk	41%
Shalev et al. 1998 (c)	Military	Short term	High risk	High risk	Unclear risk	Unclear risk	Low risk	Low risk	Unclear risk	39%
Tehrani et al. 2001 (a)	Anxiety	Medium term	High risk	High risk	Low risk	Low risk	Low risk	Low risk	High risk	41%
Tehrani et al. 2001 (b)	Depression	Medium term	High risk	High risk	Low risk	Low risk	Low risk	Low risk	High risk	41%
Tuckey et al. 2014 (a)	Psychological health	Not described	Low risk	Unclear risk	Low risk	Low risk	High risk	Low risk	Unclear risk	91%
Tuckey et al. 2014 (b)	Quality of life	Not described	Low risk	Unclear risk	Low risk	Unclear risk	High risk	Low risk	Unclear risk	89%
Tuckey et al. 2014 (c)	Substance misuse	Not described	Low risk	Unclear risk	Low risk	High risk	High risk	Low risk	Unclear risk	86%
Tuckey et al. 2014 (d)	Psychological health	Not described	Low risk	Unclear risk	Low risk	Low risk	High risk	Low risk	Unclear risk	91%
Tuckey et al. 2014 (e)	Quality of life	Not described	Low risk	Unclear risk	Low risk	Unclear risk	High risk	Low risk	Unclear risk	89%
Tuckey et al. 2014 (f)	Substance misuse	Not described	Low risk	Unclear risk	Low risk	High risk	High risk	Low risk	Unclear risk	86%
Watson et al. 2018	Stigma	Not described	Unclear risk	Unclear risk	Low risk	Low risk	Low risk	Low risk	Low risk	73%
Wesemann et al. 2020 (a)	Quality of life	Not described	High risk	High risk	High risk	High risk	Unclear risk	High risk	Unclear risk	50%
Wesemann et al. 2020 (b)	Anxiety	Not described	High risk	High risk	High risk	High risk	Unclear risk	High risk	High risk	48%
Wesemann et al. 2020 (c)	Psychological health	Not described	High risk	High risk	High risk	High risk	Unclear risk	High risk	High risk	48%
Wesemann et al. 2020 (d)	Depression	Not described	High risk	High risk	High risk	High risk	Unclear risk	High risk	High risk	48%
Wu et al. 2012 (a)	Anxiety	Short term	Low risk	High risk	Low risk	Low risk	Low risk	Low risk	Low risk	95%
Wu et al. 2012 (b)	Anxiety	Medium term	Low risk	High risk	Low risk	Low risk	Low risk	Low risk	Low risk	95%
Wu et al. 2012 (c)	Depression	Short term	Low risk	High risk	Low risk	Low risk	Low risk	Low risk	Low risk	95%
Wu et al. 2012 (d)	Depression	Medium term	Low risk	High risk	Low risk	Low risk	Low risk	Low risk	Low risk	95%
Young. 2003	Depression	Not described	Unclear risk	High risk	Low risk	Low risk	Low risk	Low risk	High risk	66%
Biggs et al. 2016 (a)	Depression	Medium term	Low risk	Unclear risk	Unclear risk	Low risk	High risk	High risk	Low risk	86%
Biggs et al. 2016 (b)	Depression	Long term	Low risk	Unclear risk	Unclear risk	Low risk	High risk	High risk	Low risk	86%
Biggs et al. 2016 (c)	Quality of life	Short term	Low risk	Unclear risk	Unclear risk	Low risk	High risk	High risk	Low risk	86%
Greenberg et al. 2010 (a)	Psychological health	Long term	Low risk	Unclear risk	Unclear risk	Low risk	Low risk	Low risk	Low risk	95%
Greenberg et al. 2010 (b)	Stigma	Long term	Low risk	Unclear risk	Unclear risk	High risk	Low risk	Low risk	Low risk	91%
Jones et al. 2017 (a)	Psychological health	Long term	Unclear risk	Unclear risk	Unclear risk	High risk	Low risk	Low risk	Unclear risk	64%
Jones et al. 2017 (b)	Substance misuse	Long term	Unclear risk	Unclear risk	Unclear risk	Low risk	Low risk	Low risk	Unclear risk	68%
Jones et al. 2017 (c)	Stigma	Long term	Unclear risk	Unclear risk	Unclear risk	High risk	Low risk	Low risk	Unclear risk	64%

Selection bias

Overall, selection bias within the primary studies were varied. Six of the 20 studies were rated as low risk of bias due to the use of sample randomisation and clear descriptions of participants (e.g., Adler, et el., 2008 (a-g) & 2009 (a-c); Deahl et al., 2000 (a-c, g-l), Tuckey et al., 2014 (a-f). Eight studies showed unclear risk of bias due to unclear recruitment strategies or participant characteristics (e.g., Jones et al., 2017 (a-c) & Deahl et al., 1994). Six studies were rated as high risk of bias due to the use of target sampling or the control group consisting of people who declined the intervention (e.g., Ruck et al., 2013 (a, b) & Wesemann et al., 2020 (a-d).

Performance bias

Overall, studies' performance bias was unclear or high risk. The 14 studies at high risk of bias were namely due to participants' awareness of group allocation (e.g., Adler, et el., 2008 (a-g) & 2009 (a-c); Deahl et al., 1994 & 2000 (a-l); Kenardy et al., 1996 (a, b). The remaining six studies were rated as unclear risk of bias due to unclear information regarding participants' understanding of the research and group allocation (e.g., Biggs et al., 2016 (a-c); Harris et al., 2011 (a-e); Jones et al., 2017 (a-c).

Treatment fidelity

Treatment fidelity varied across the studies. Half of the studies were rated as low risk of bias for treatment fidelity, in that they clearly described the treatment model and protocol, used trained facilitators, and assessed treatment fidelity by recording sessions (e.g., Carlier et al., 2000; Ruck et al., 2013 (a, b) & Tuckey et al., 2014 (a-f). Seven studies were rated as unclear risk of bias, namely due to a lack of detail about the treatment protocol used or assessment of treatment fidelity (e.g., Greenberg et al., 2010 (a, b); Leanard & Alison, 1999

(a, b); Shalev et al., 1998 (a-c). The remaining four studies were rated as high risk of bias because of the external and uncontrolled nature of the treatment administration, or that different work sites used different treatments (e.g., Regehr et al., 2000; Wesemann et al., 2020 (a-d).

Detection bias

Detection bias varied across and within the studies. For instance, Adler et al., (2008) showed low risk for some outcome measures by using standardised measurements (Adler et al., 2008 (a, b, e-g)) while other outcome measures were unclear in risk of bias due to attaining a Cronbach's alpha between 0.6 and 0.7 (Adler et al., 2008 (c, d)). Additionally, Tuckey et al., (2014) used standardised measurements for assessing psychological distress (Tuckey et al., 2014 (a, d)), however, used a measurement standardised for adolescents on an adult sample when assessing quality of life, and used alcohol units to measure substance misuse (Tuckey et al., 2014 (b, c, e, f)). Consequently, the outcome for substance misuse within Tuckey et al., (2014 (c, f) was removed from the data set due to violating the inclusion criteria of using standardised outcome measures. Studies with low risk of detection bias reported the reliability and validity statistics on the outcome measures used (e.g., Adler et al., 2009 (a, b, e-g); Kenardy et al., 1996 (a, b); Ruck et al., 2013 (a, b)). Unclear risk within studies was based on a lack of reporting the reliability or validity of the outcome measures used, or these psychometric properties of the measures were poor (e.g., Deahl et al., 2000 (a-l); Leanard & Alison, 1999 (a, b)). High risk of bias within studies were namely due to the use of non-standardised outcome measures, or using different measures across participants (e.g., Jones et al., 2017 (a, c); Wesemann et al., 2020 (a-d)).

Statistical bias

Statistical bias within the studies tended to either be low or high risk. Ten studies were rated as low risk due to using appropriate statistical analyses and specification of missing data processes (e.g., Harris et al., 2011 (a-e); Kenardy et al., 1996 (a, b); Tehrani et al., 2001 (a, b); Wu et al., 2012 (a-d)). Seven studies were rated as high risk of bias, primarily due to attrition of participants exceeding 30% of the original sample (e.g., Adler et al., 2008 (a-g) & 2009 (a-c); Biggs et al., 2016 (a-c); Deahl et al., 2000 (a-l); Ruck et al., 2013 (a, b)). The remaining four studies showed unclear risk of bias because of a lack of description of the statistics used (Carlier et al., 2000; Regehr et al., 2000; Wesemann et al., 2020 (a-d)).

Reporting bias

Reporting bias appeared generally low risk, with 17 studies acquiring such a rating. Low reported bias tended to include studies reporting all the outcomes measured, and offering explanations for sample attrition (e.g., Adler et al., 2008 (a-g) & 2009 (a-c); Deahl et al., 1994 & 2000 (a-l); Shalev et al., 1998 (a-c); Tehrani et al., 2001 (a, b)). Unclear risk of bias generally included incomplete reports of descriptive or statistical results (Harris et al., 2011 (a-e)). High risk of reporting bias was due to the reporting of only significant results or not reporting all the outcomes measures used (Biggs et al., 2016 (a-c); Wesemann et al., 2020 (a-d)).

Generalisability

Lastly, generalisability of the studies varied. The majority of 12 studies were rated as low risk due to larger samples (e.g., Adler et al., 2008 (a-g) & 2009 (a-c); Greenberg et al., 2010 (a, b); Watson et al., 2018; Wu et al., 2012 (a-d)). Unclear risk of bias within generalisability occurred when studies had smaller sample sizes, such as 20 – 40 participants in each group (e.g., Leanard & Alison, 1999 (a, b); Shalev et al., 1998 (a-c)). High risk studies

tended to have very small sample sizes, some as low as four to nine participants (e.g., Tehrani et al., 2001 (a, b); Young, 2003; Wesemann et al., 2020 (b-d)).

Summary

Overall, the risk of bias proved varied across and within studies. No study achieved low or high risk rating across the bias domains. However, one study of concern, Wesemenn et al., (2020), displayed high risk across six bias domains and unclear bias for one domain. The risk domains in which the majority of studies scored low ratings were treatment fidelity, statistical bias, reporting bias, and generalisability. Nonetheless, reasonable amounts of studies within these domains were rated with unclear or high risk of bias. The risk domain of performance bias showed predominantly high risk ratings across the studies.

The studies with unclear and high risk of bias were included in the meta-analysis due to the low number of studies within the literature. The studies included represent the summary of research literature within early post-trauma interventions, however, the results of the meta-analysis should be interpreted with caution. Future research may provide higher quality research to further explore this area.

Results

The outcomes measuring psychological distress within the primary studies were varied. Effects were examined using standardised mean difference (SMD). The outcomes extracted included depression, anxiety, anger, perceived support, substance misuse of alcohol, general psychological distress, quality of life, coping, military-specific outcomes, sleep, and self-related outcomes (e.g., self-efficacy). Of these outcomes, seven of the outcomes were excluded from the analysis due to insufficient data, e.g., the outcome of anger had only three data points. The remaining primary outcomes included depression, anxiety, substance misuse

and general psychological health. Consequently Leanard & Alison (1999 (a, b)) and Watson (2000) were not meta-analysed as they did not include the primary outcomes, which left 18 studies in the meta-analysis. The primary outcomes were analysed alongside the time of the administration of outcome measures after the intervention had occurred. Data extracted for the subgroup analyses included the studies design, country, whether the participants experienced single or multiple traumas prior to the intervention, whether the intervention consisted of single or multiple sessions, the time of intervention after the traumatic incident occurred, intervention length, whether the intervention was manualised or non-manualised, and the participants' profession. Some of the subgroup outcomes were not included in the analyses due to insufficient data. Table 5 describes the categories for the different times of the outcomes.

Table 5

Description of the Categories of Time within Outcomes

Subgroup Analysis Outcome	Description	
Time of outcome	Short term	0 – 3 months
	Medium term	4 – 6 months
	Long term	7+ months
Time of intervention after incidents	Short	24 hours
	Medium	24 hours – 1 week
	Long	1 + week
Length of intervention	Short	1 hour or less
	Medium	1 – 2 hours
	Long	2 + hours

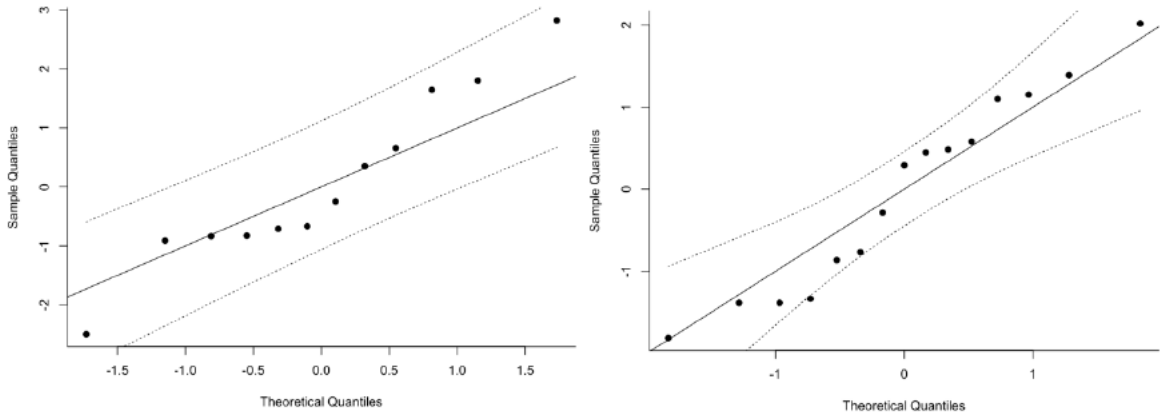
Depression

Selection of the Meta-analytic Model

The distribution of primary study effects is shown in Figure 2. The between studies variance (tau^2) in the random effects model was calculated using the DerSimonian-Laird estimator.

Figure 2

QQ plot of the distribution of depression within the fixed effects model (plot A) and the random effects model (plot B)



A B

Figure 2 shows clear evidence of non-normality in the distribution of treatment effects within the fixed effects model, whereas, the random effects model using the DerSimonian-Laird estimator evidenced a good fit to these data. Therefore, this indicates using the random effects model using the DerSimonian-Laird estimator estimate as an appropriate method for the calculation of this meta-analysis.

The omnibus test. The treatment effects for depression described in the primary studies are reported in Table 6. There were 11 studies, recording 15 data points and reporting a total of 3574 participants. Participants included male and females, with ages ranging from 16-63 years old. Participants were selected from various professions including the military, emergency services, e.g., firefighters, police and prison staff, and retail workers. The types of traumatic incidents prompting intervention included witnessing the death of other people, handling the bodies of people who had died, people having their life threatened, armed robbery, witnessing other people's self-harming or suicidal behaviours, natural disasters, e.g., an earthquake, and a terror attack. Outcome measures used included the Centre for Epidemiological Studies: Depression Scale, Hospital Anxiety and Depression Scale, and the Patient Health Questionniare-9. Table 6 illustrates further study and participant characteristics.

Table 6

Study and Participant Characteristics for the Outcome of Depression

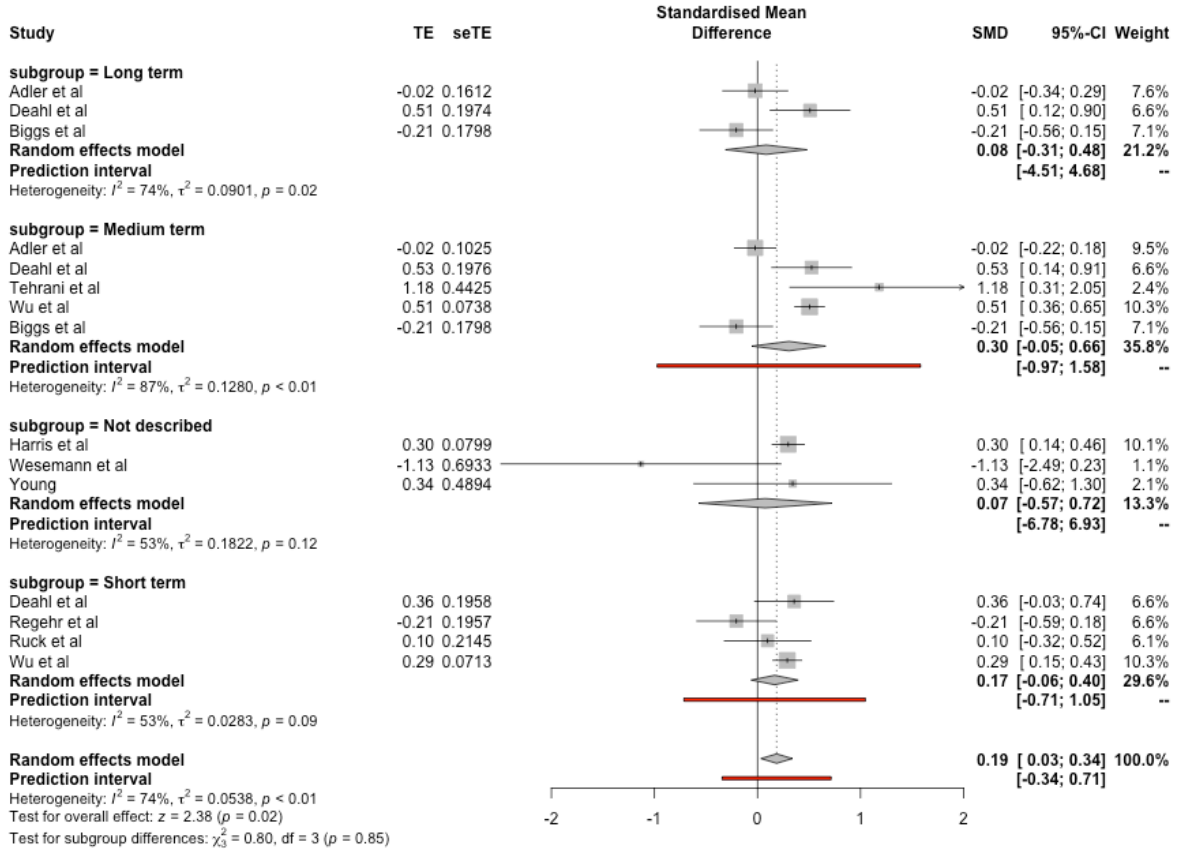
Study label	Outcome time	Effect size (*d*)	95% CI	Study	Intervention	Country
Adler et al (2008)	Medium Long	-0.02 -0.02	-0.22-0.18 -0.34-0.29	RCT	Critical Incident Stress Debriefing (CISD)	USA
Deahl et al (2000)	Short Medium Long	0.36 0.53 0.51	-0.03-0.74 0.14-0.91 0.12-0.90	RCT	Psychological intervention	UK
Harris et al (2011)	N/A	0.30	0.14-0.46	Non RCT	CISD	USA
Regehr et al (2000)	Short	-0.21	-0.59-0.18	Non RCT	Psychological intervention	Australia
Ruck et al (2013)	Short	0.10	-0.32-0.52	Non RCT	CISD	UK
Tehrani et al (2001)	Medium	1.18	0.31-2.05	Pre and Post	Group intervention	UK
Wesemann et al (2020)	N/A	-1.13	-2.49-0.23	Non RCT	Crisis intervention	Germany
Wu et al (2012)	Short Medium	0.29 0.51	0.15-0.43 0.36-0.65	RCT	512 PIM	China

Study label	Outcome time	Effect size (*d*)	95% CI	Study	Intervention	Country
Young (2003)	N/A	0.34	-0.62-1.30	Non RCT	Stress intervention	USA
Biggs et al (2016)	Medium Long	-0.21 -0.21	-0.56-0.15 -0.56-0.15	RCT	Psychological first aid	USA

A random effects models was calculated using the generic inverse variance method. When the treatment effects were considered across all of the time points then a statistically significant positive treatment effect, favouring intervention, was observed (SMD = 0.1860, 95% CI 0.03 to 0.34). For the short-, medium- and long-term outcomes there were small positive treatment effects favouring the intervention. However, these treatment effects did not reach statistical significance in the short (SMD = 0.17, 95% CI -0.06 to 0.40), medium (SMD = 0.30, 95% CI -0.05 to 0.66) or long term (SMD = 0.08, 95% CI -0.31 to 0.48), which may reflect the small number of studies that were divided into these specific time points. There was no significant difference between the treatment effects across the three points ($X^2 = 0.80$, p =0.85). Figure 3 displays the results for depression.

Figure 3

Forest Plot for the Outcome of Depression

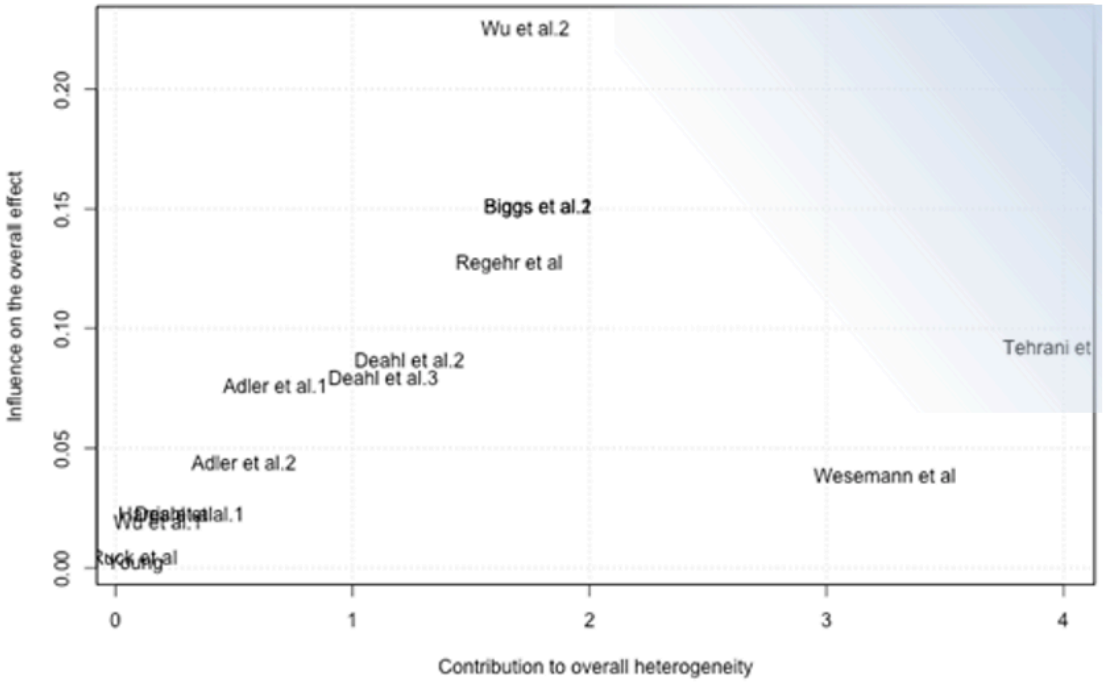


An acceptable level of heterogeneity in the primary studies was observed (Higgin's I^2 = 74%, tau^2 = 0.0538, p <0.01). This suggests an acceptable level of variation in the primary studies, with this body of studies reporting a coherent and consistent effect size.

The impact of influential primary studies. The impact of disproportionately influential studies was assessed using a "leave-one-out" analysis, in which the random effects model was calculated with each of the primary studies removed in turn. Change in weighted average effect size (i.e., influence) and the change in heterogeneity (i.e., discrepancy) was recorded. The result of this "leave-one-out" analysis is presented on the Baujat plot (Baujat, Pignon, & Hill, 2002) in Figure 4.

Figure 4

Baujat Diagnostic Plot of Sources of Heterogeneity

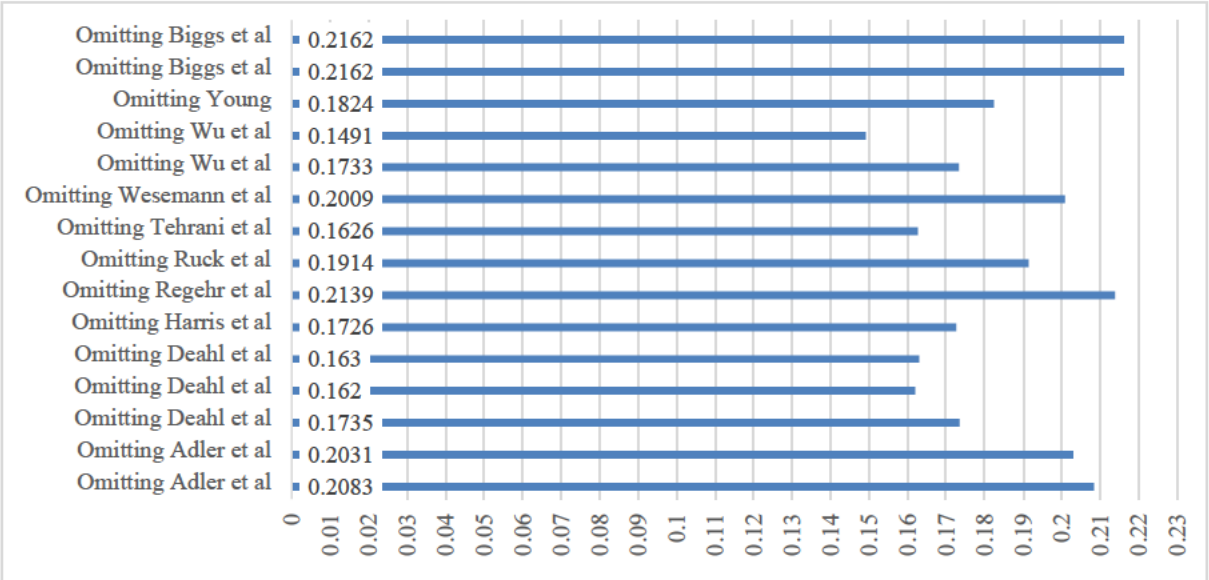


Note. The horizontal axis reports the discrepancy of the study with the rest of the literature. The shaded area is associated with influential and discrepant studies.

As can be seen from Figure 4 there were no studies in the area of the Baujat chart associated with influential and discrepant studies. The chart shown in Figure 5 depict the change in pooled estimate of Standard Mean Difference following the omission of each of the primary studies. The omission of any individual study did not substantially change the pooled estimate of the treatment effects nor did it change the substantive conclusions of this meta-analysis.

Figure 5

The Change in Pooled Estimate of SMD Following the Omission of Each of the Primary Studies



The effect of risk of bias in the primary studies. The quality effects model was calculated using the total score from the risk of bias ratings and the study design ratings reported in Table 4. This score considers the position of study's overall design within the study design hierarchy and the ratings of risk of bias as reported in Table 3.

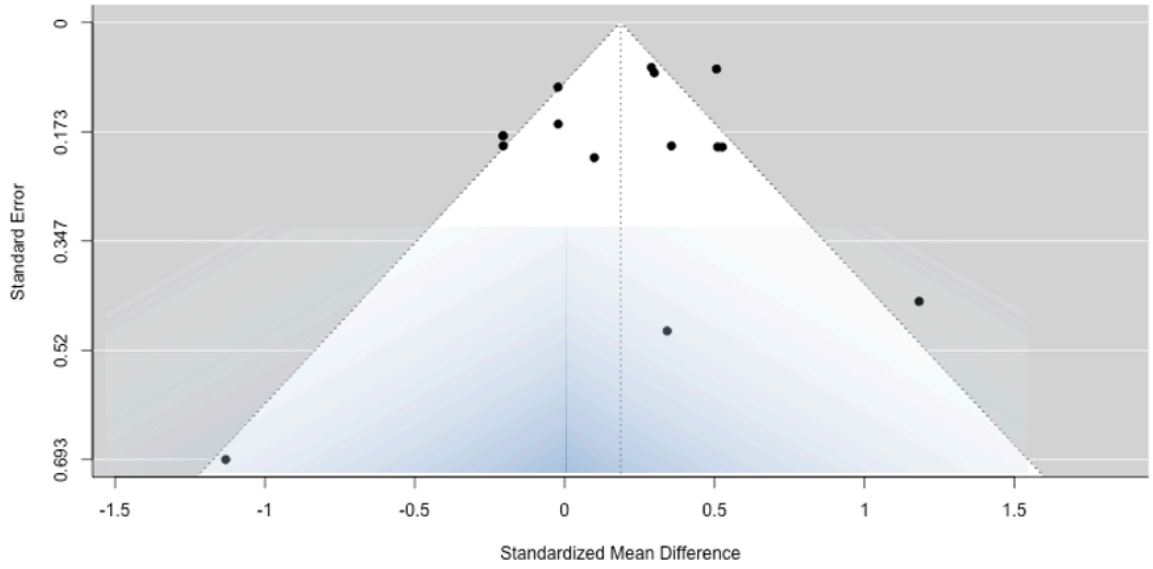
The quality effects model can be interpreted as the meta-analytic synthesise that would have been obtained had all the studies been of the same methodological quality as the best study in the review. The quality effect model reported a synthesis of SMD = 0.1886 (95% CI = 0.0335 to 0.3437). The quality effects model evidences an approximate 1.4% increase relative to the uncorrected random effects estimate. Accordingly, when the synthesis includes information about the methodological quality of the studies there is a trivial change in the weighted average of these studies and, therefore, the variation in the risk of bias ratings and

the study design ratings did not affect the estimate of the weighted average treatment effect for the outcome of depression.

The impact of publication and small study biases. Publication bias is caused by the tendency for statistically significant results to be published and the reticence to publish papers with non-significant results. Small study bias is the tendency for studies with smaller sample sizes to show greater variability in their measurement of the treatment effect. These biases can be identified in a funnel plot, which plots the magnitude of the study's treatment effect against the precision of measurement (i.e., a function of sample size). If there is an absence of publication bias, studies with smaller sample sizes will show greater variability and scatter more widely at the bottom of the plot compared to studies with larger samples at the top, which will lie closer to the overall meta-analytic effect, creating a symmetrical funnel shape. If there is an absence of studies in the area of the plot associated with small sample sizes and non-significant results, then it is likely there is some publication bias leading to an overestimation of the true effect. The funnel plot of depression is presented in Figure 6.

Figure 6

Funnel plot of the depression



Note. The 95% confidence interval of the expected distribution of depression is shown as an inverted "funnel". The area associated with publication bias and small study effects is highlighted in blue.

As can be seen from Figure 6, there is no clear evidence of publication bias in the distribution of treatment effects, in that, the area associated with publication bias and small study effects contains published studies. Therefore, no simulation of, and adjustment for, publication bias and small study effects was undertaken.

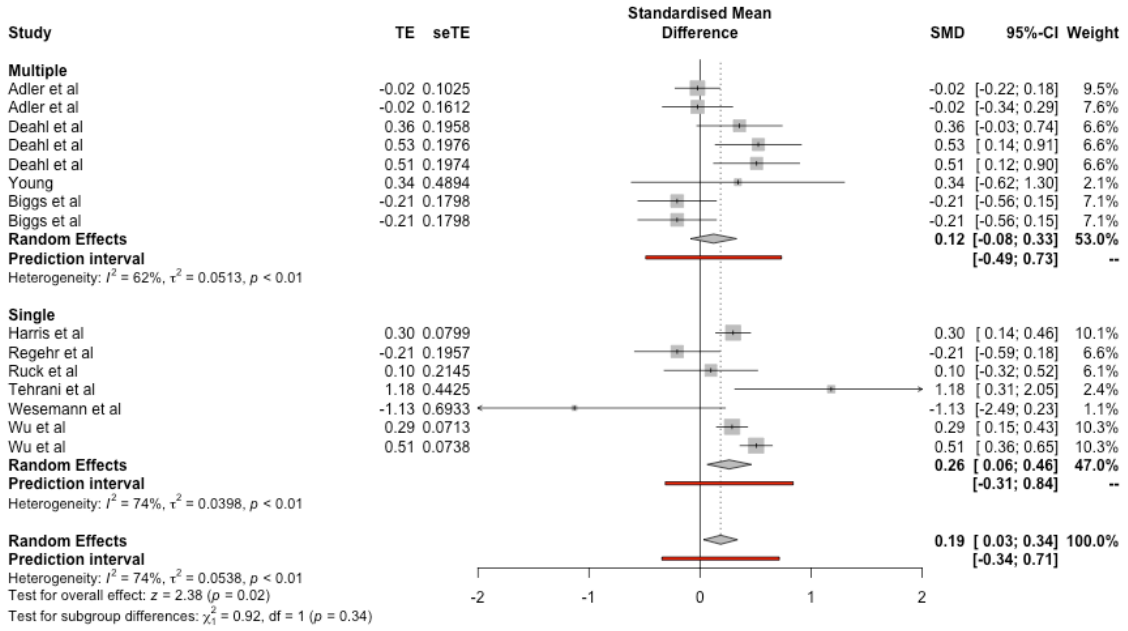
Subgroup Analyses and Meta-regression

To further explore the impact of study level covariates upon the efficacy of the interventions a series of subgroup analysis were conducted.

Single versus multiple traumas. A subgroup analysis was undertaken to assess whether the interventions had differing efficacy for persons presenting with single versus multiple traumas (see Figure 7). The studies did not offer information on how many incidents participants may have experienced prior to the intervention. There was no statistically significant difference (X^2 =0.92, p = 0.34) between outcomes for persons with single versus multiple traumas.

Figure 7

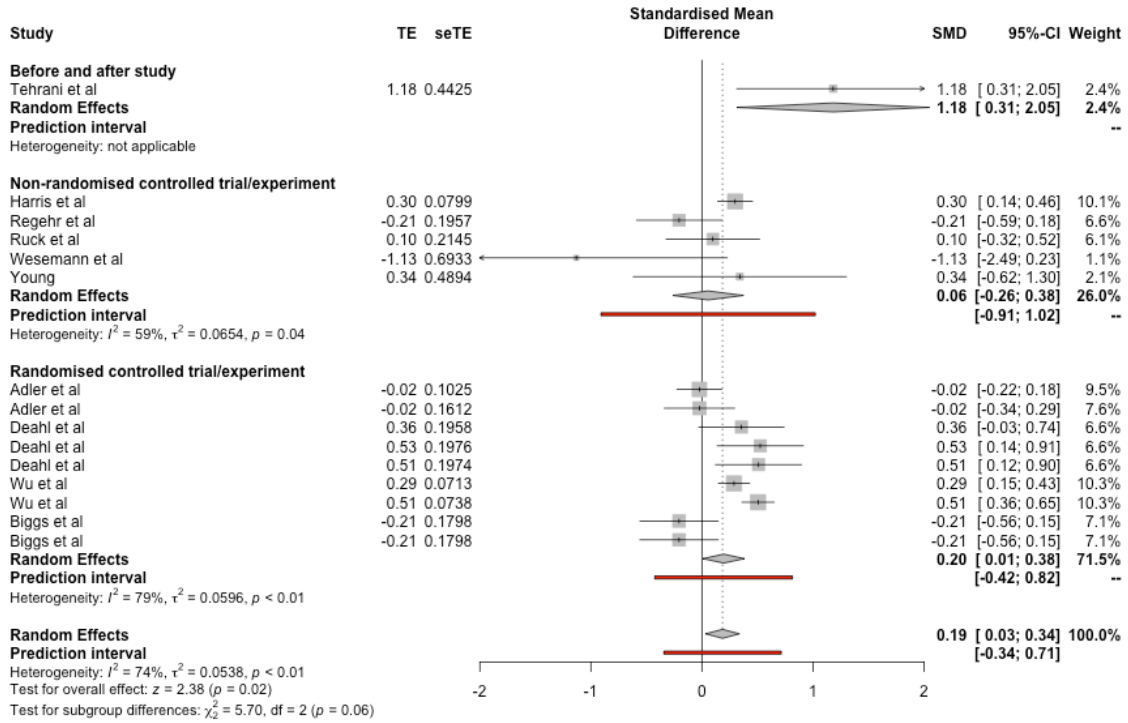
Subgroup plot of single versus multiple traumas in the outcome of depression



The impact of study design. A subgroup analysis was undertaken to examine differences in outcome dependant on the type of study design used in the primary study (see Figure 8). There was no statistically significant difference (X^2 =5.70, p = 0.06) between outcomes for the different study designs. Of note, the single within-subjects' design study (Tehrani et al, 2001) produced an extremely positive treatment effect which is inconsistent with the other studies in this meta-analysis.

Figure 8

Subgroup Plot of Study Design in the Outcome of Depression

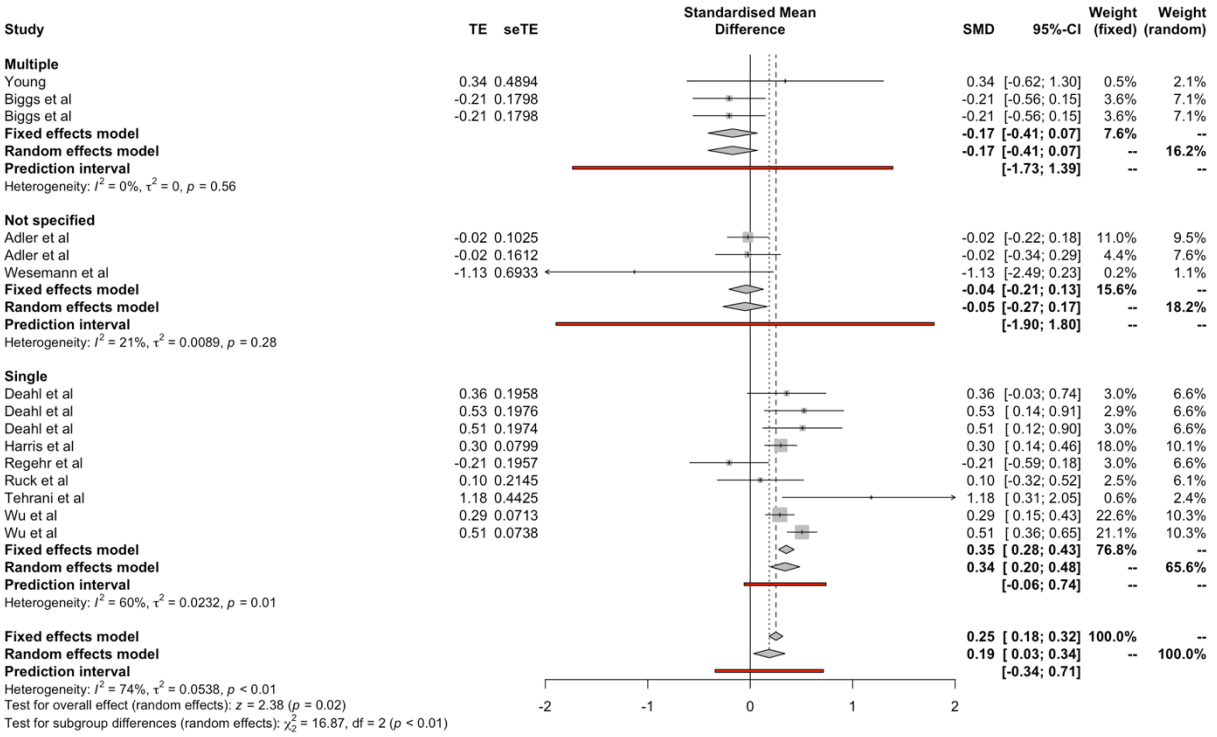


Single versus multiple sessions. A subgroup analysis was undertaken to examine differences in outcome dependant on whether the intervention consisted of single or multiple sessions (see Figure 9). Of the information reported, multiple sessions were between two and eight sessions.

There was a statistically significant difference (X^2 =16.87, p = < 0.01) between outcomes for people who attended single versus multiple sessions, favouring single session interventions. For the single session interventions there was a small positive treatment effect (SMD = 0.34, 95% CI 0.20 to 0.48). However, this small effect may be due to the small number of studies within the analysis.

Figure 9

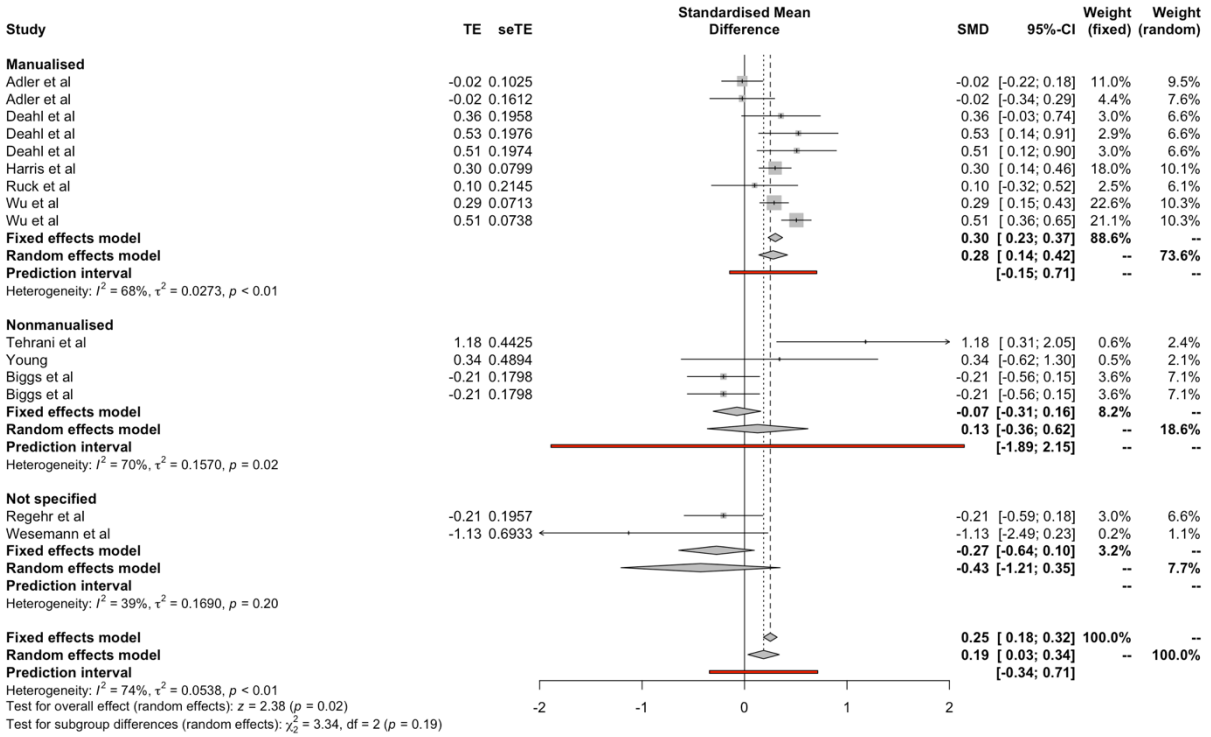
Subgroup Plot of Single and Multiple Intervention Sessions in the Outcome of Depression



Manualised versus un-manualised intervention. A subgroup analysis was undertaken to examine differences in outcome dependant on whether the interventions were manualised or non-manualised (see Figure 10). The type of manualised interventions included CISD and TRiM, whereas non-manualised interventions included interventions applying principles of psychological first aid. There was no statistically significant difference (X^2 =3.34, p = 0.19) between outcomes for manualised versus non-manualised interventions.

Figure 10

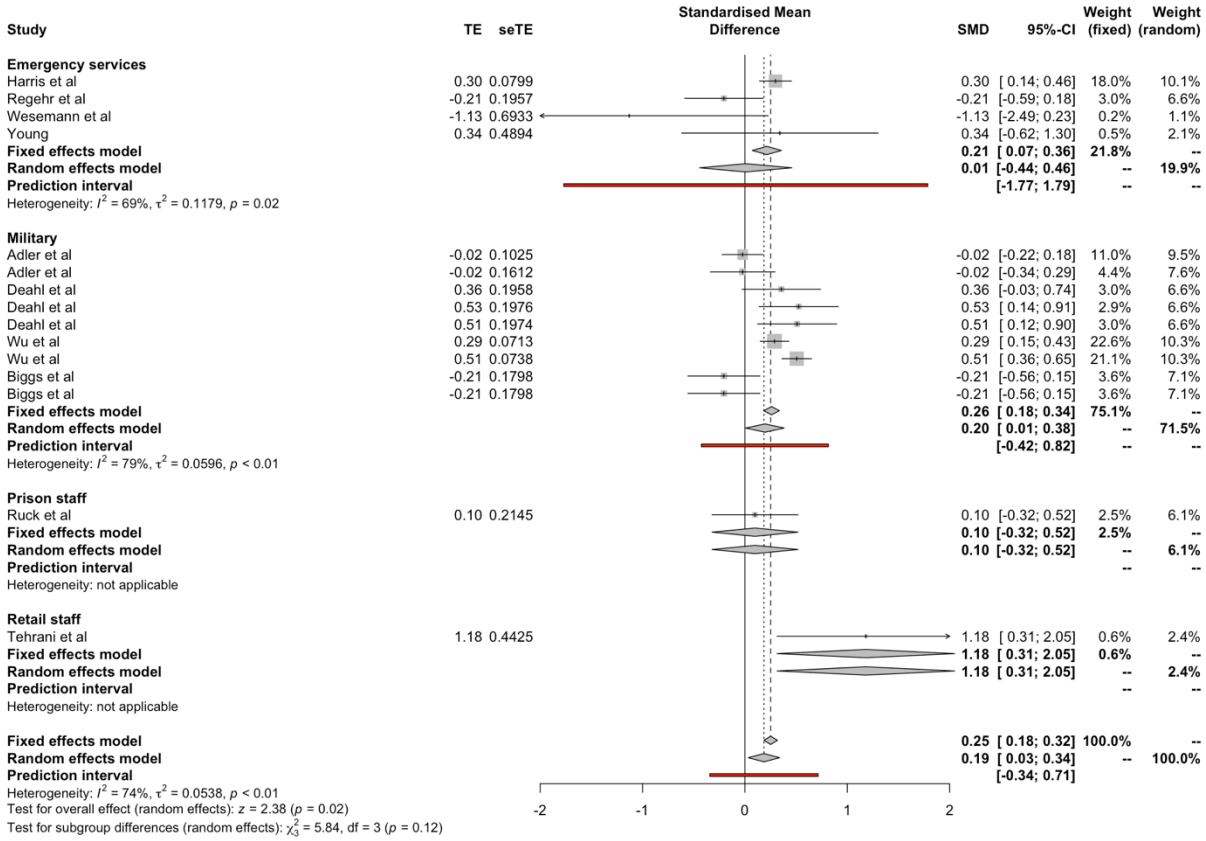
Subgroup Plot of Manualised and Non-manualised Interventions in the Outcome of Depression



Profession. A subgroup analysis was undertaken to examine differences in outcome dependant on the profession of participants (see Figure 11). There was no statistically significant difference (X^2 =5.84, p = 0.12) between outcomes for the different professions.

Figure 11

Subgroup Plot of Profession in the Outcome of Depression



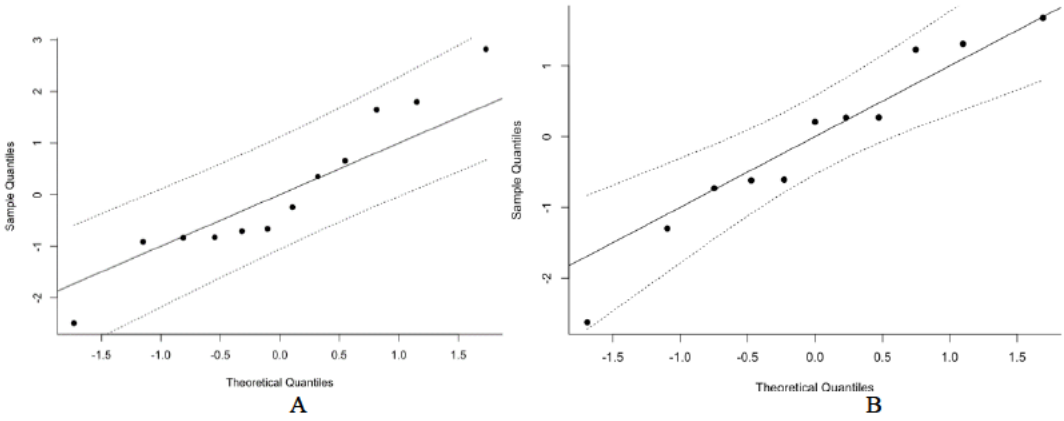
Anxiety

Selection of the Meta-analytic Model

The distribution of primary study effects is shown in Figure 12. The between studies variance (tau^2) in the random effects model was calculated using the DerSimonian-Laird estimator.

Figure 12

QQ Plot of the Distribution of Anxiety Within the Fixed Effects Model (Plot A) and the Random Effects Model (Plot B)



As can be seen from Figure 12, the random effects model evidenced a good fit compared to the fixed effects model, in which the distribution of treatment effects demonstrated more non-normality. Consequently, the random effects model was an appropriate method for the meta-analysis calculation.

The omnibus test. The treatment effects for anxiety described in the primary studies are reported in Table 7. There were seven studies, recording ten data points, reporting a total of 2841 participants. Participants included male and females, with recorded ages ranging from 18-52 years. Participants were selected from various professions including the military,

emergency services, e.g., firefighters, police and prison staff, and retail workers. The types of incidents prompting intervention interventions included participants witnessing the death of other people, witnessing or handling the bodies of people who had died, people having their life threatened, witnessing other people's self-harming or suicidal behaviours, responding to an earthquake and a train crash. The types of outcome measures used included the State-trait Anxiety Inventory, Hospital Anxiety and Depression Scale, and the Generalised Anxiety Disorder Scale. Table 7 also illustrates further study characteristics.

Table 7

Study and Participant Characteristics for the Anxiety Outcome

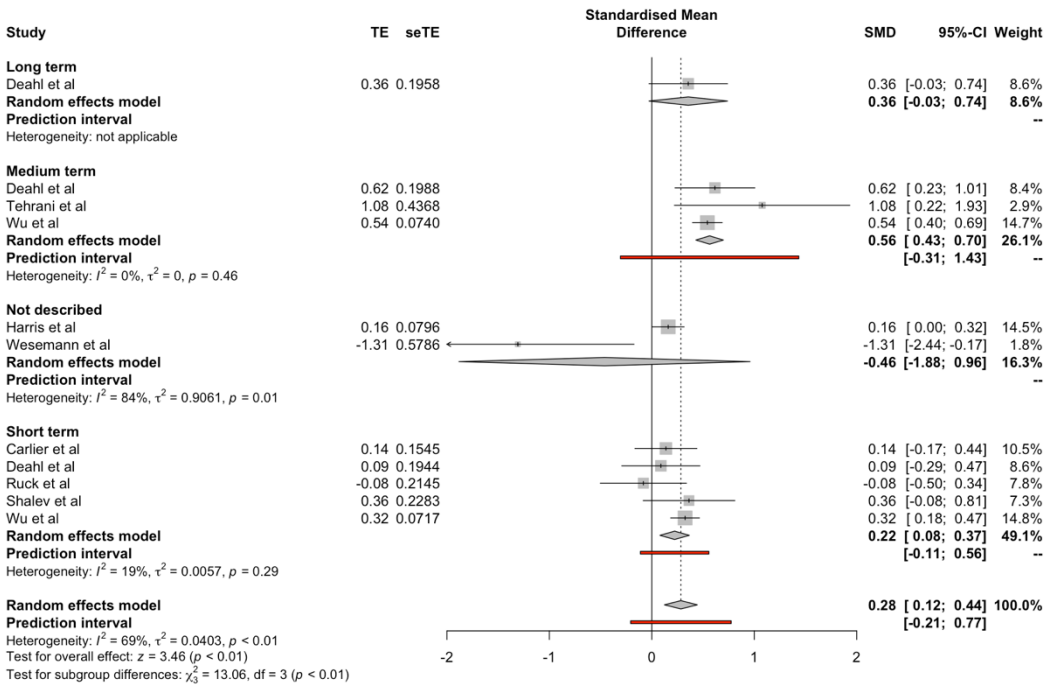
Study label	Outcome time	Effect size (*d*)	95% CI	Study Design	Intervention	Country
Carlier et al (2000)	Short	0.14	-0.17-0.44	Non RCT	CISD	Netherlands
Deahl et al (2000)	Short	0.09	-0.29-0.47	RCT	Psychological intervention	UK
	Medium	0.62	0.23-1.01			
	Long	0.36	-0.03-0.74			
Harris et al (2011)	N/A	0.16	0.00-0.32	Non RCT	CISD	USA
Ruck et al (2013)	Short	-0.08	-0.50-0.34	Non RCT	CISD	UK
Shalev et al (1998)	Short	0.36	-0.08-0.81	Pre and Post	Historical group intervention	Israel
Tehrani et al (2001)	Medium	1.08	0.22-1.93	Pre and Post	Group intervention	UK
Wu et al (2012)	Short Medium	0.32 0.54	0.18-0.47 0.40-0.69	RCT	512 PIM	China

A random effects models was calculated using the generic inverse variance method. When the treatment effects were considered across all of the time points then a statistically

significant positive treatment effect, favouring intervention, was observed (SMD = 0.28, 95% CI = 0.12 to 0.44). For the short-, medium- and long-term outcomes there were small positive treatment effects favouring intervention. Treatment effects did reach statistical significance in the short (SMD = 0.22, 95% CI = 0.08 to 0.37) and medium term (SMD = 0.56, 95% CI = 0.43 to 0.70). Although the positive treatment effect reported in the long term did not reach statistical significance (SMD = 0.36, 95% CI = -0.03 to 0.74), which may reflect this specific time point including one study. Figure 13 displays the results for the outcome of anxiety.

Figure 13

Forest Plot of the Outcome of Anxiety



An acceptable level of heterogeneity in the primary studies was observed (Higgin's I^2 = 69%, tau^2 = 0.0403, p <0.01). This suggests an acceptable level of variation in the primary studies with this body of studies reporting a relatively coherent and consistent effect size.

Considering the significant difference across the time points ($X^2 = 13.06$, $p < 0.01$) and no time point consisting of greater than ten studies it was not possible to undertake further examination. Hence, there were no further explorations into the impact of influential primary studies, the effect of risk of bias in the primary studies, the impact of publication and small study biases, or subgroup analyses.

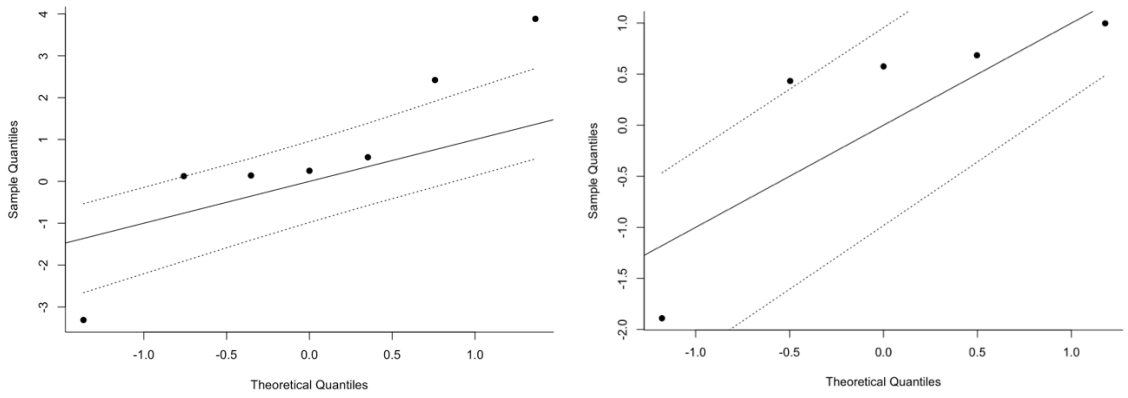
Substance Misuse

Selection of the Meta-analytic Model

The distribution of primary study effects is shown in Figure 14. The between studies variance (tau^2) in the random effects model was calculated using the DerSimonian-Laird estimator.

Figure 14

QQ Plot of the Distribution of Substance Misuse Within the Fixed Effects Model (Plot A) and the Random Effects Model (Plot B)



A B

Figure 14 shows evidence of similar normality in the fixed and random effects models. Paralleling the previous analyses, the random effects model was focused on.

The omnibus test. The treatment effects for substance misuse described in the primary studies are reported in Table 8. There were three studies, consisting of five points of outcome data, reporting a total of 811 participants. Participants included male and females, with recorded ages ranging from 18-38 years. Participants were selected from the military. The types of incidents prompting intervention interventions included witnessing the death of other people, witnessing or handling the bodies of people who had died, and people undergoing sustained gunfire or bombing. Outcome measures used included the Alcohol Users Disorder Identification Test, and the CAGE Substance Abuse Screening Tool. Table 8 illustrates further study characteristics.

Table 8

Study and Participant Characteristics for the Substance Misuse Outcome

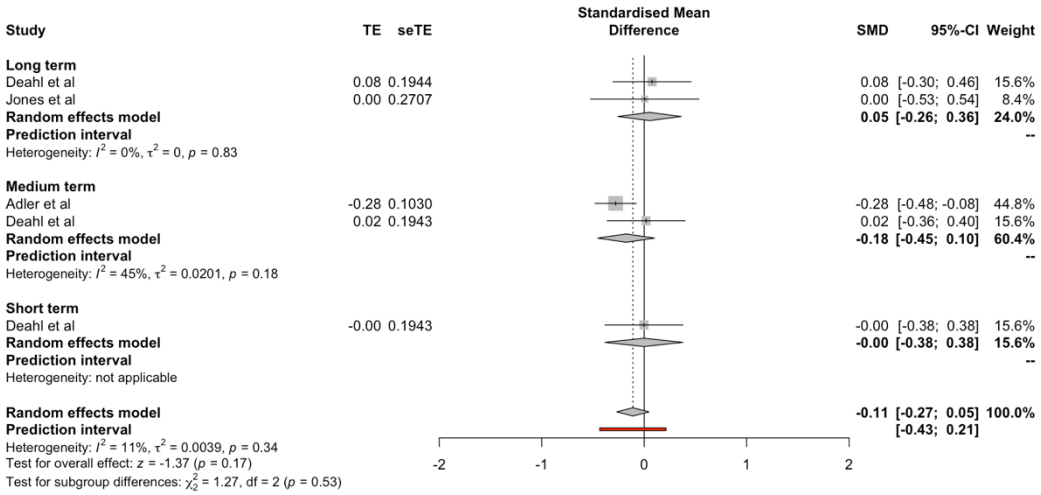
Study label	Outcome time	Effect size (*d*)	95% CI	Study Design	Intervention	Country
Adler et al (2008)	Medium	-0.28	-0.48- -0.08	RCT	CISD	USA
Deahl et al (2000)	Short	-0.00	-0.38-0.38	RCT	Psychological intervention	UK
	Medium	0.02	-0.36-0.40			
	Long	0.08	-0.30-0.46			
Jones et al (2017)	Long	0.00	-0.53-0.54	Non RCT	Trauma Risk Management	UK

A random effects models was calculated using the generic inverse variance method. A small negative, non-significant treatment effect was observed when considering all of the time points (SMD = -0.1103, 95% CI = -0.27 to 0.05). The treatment effects did not reach statistical significance in the short (SMD = -0.00, 95% CI = -0.38 to 0.38), medium (SMD = -0.18, 95% CI = -0.45 to 0.10) or long term (SMD = 0.05, 95% CI = -0.26 to 0.36). The non-significant findings may reflect the small number of studies that were reporting outcomes at these specific time points. There were no significant differences found between the treatment

effects between the three points ($X^2 = 1.27$, $p = 0.53$). Figure 15 displays the results of the substance misuse outcome.

Figure 15

Forest plot of the outcome of substance misuse



Heterogeneity reached an acceptable level (Higgin's $I^2 = 11\%$, $tau^2 = 0.0039$, $p = 0.34$). This suggests an acceptable level of variation in the primary studies.

Due to the small number of studies reporting this outcome, no further examination of biases relating to influential studies, publication and small study bias were pursued.

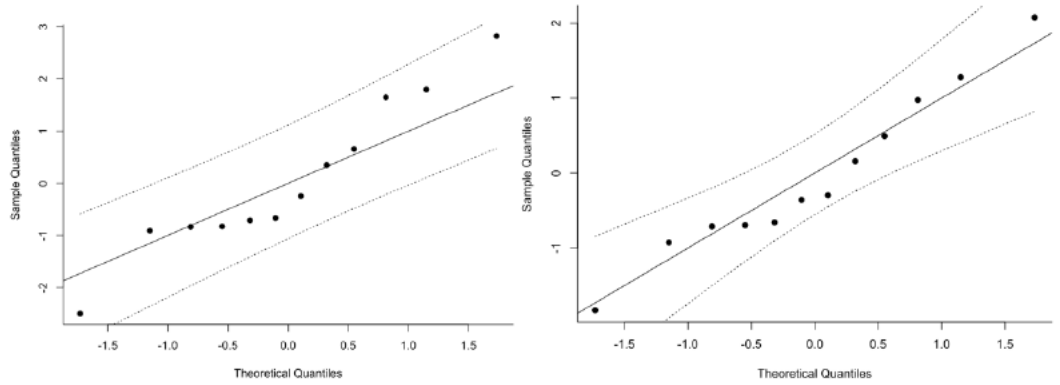
General Psychological Health

Selection of the Meta-analytic Model

The distribution of primary study effects is shown in Figure 16. The between studies variance (tau^2) in the random effects model was calculated using the DerSimonian-Laird estimator.

Figure 16

QQ Plot of the Distribution of General Psychological Health Within the Fixed Effects Model (Plot A) and the Random Effects Model (Plot B)



A B

Figure 16 demonstrates relative non-normality in the distribution of treatment effects within the fixed effects model. Hence, the good fit to data seen within the random effects model suggests this as an appropriate method for this meta-analysis calculation.

The omnibus test. The treatment effects for general psychological health described in the primary studies are reported in Table 9. There were seven studies, recording 12 data points, reporting a total of 2349 participants. Participants included male and females, with recorded ages ranging from 18-44 years. Participants were selected from professions including the military and emergency services. The types of incidents prompting intervention interventions included participants witnessing the death or serious injury of other people, handling the bodies of people who had died, having their life threatened through gunfire or bombing, responding to a terror attack and an earthquake. The outcome measures used included the General Health Questionnaire, a Symptom Checklist, and Kessler-10. Table 9 illustrates further study characteristics.

Table 9

Study and Participant Characteristics for the General Psychological Health Outcome

Study label	Outcome time	Effect size (*d*)	95% CI	Study Design	Intervention	Country
Adler et al (2009)	Medium	0.26	-0.03-0.55	RCT	Battlemind Intervention	USA
Deahl et al (1994)	Long	-0.04	-0.57-0.49	Non RCT	CISD	UK
Deahl et al (2000)	Short	0.09	-0.29-0.47	RCT	Psychological Intervention	UK
	Medium	0.57	0.18-0.96			
	Long	0.37	-0.01-0.75			
Kenardy et al (1996)	Medium	-0.10	-0.40-0.20	Non RCT	Psychological Intervention	Australia
	Long	-0.35	-0.65- -0.04			
Tuckey et al (2014)	N/A	-0.20	-0.83-0.43	RCT	CISD	Australia
	N/A	0.22	-0.36-0.79			

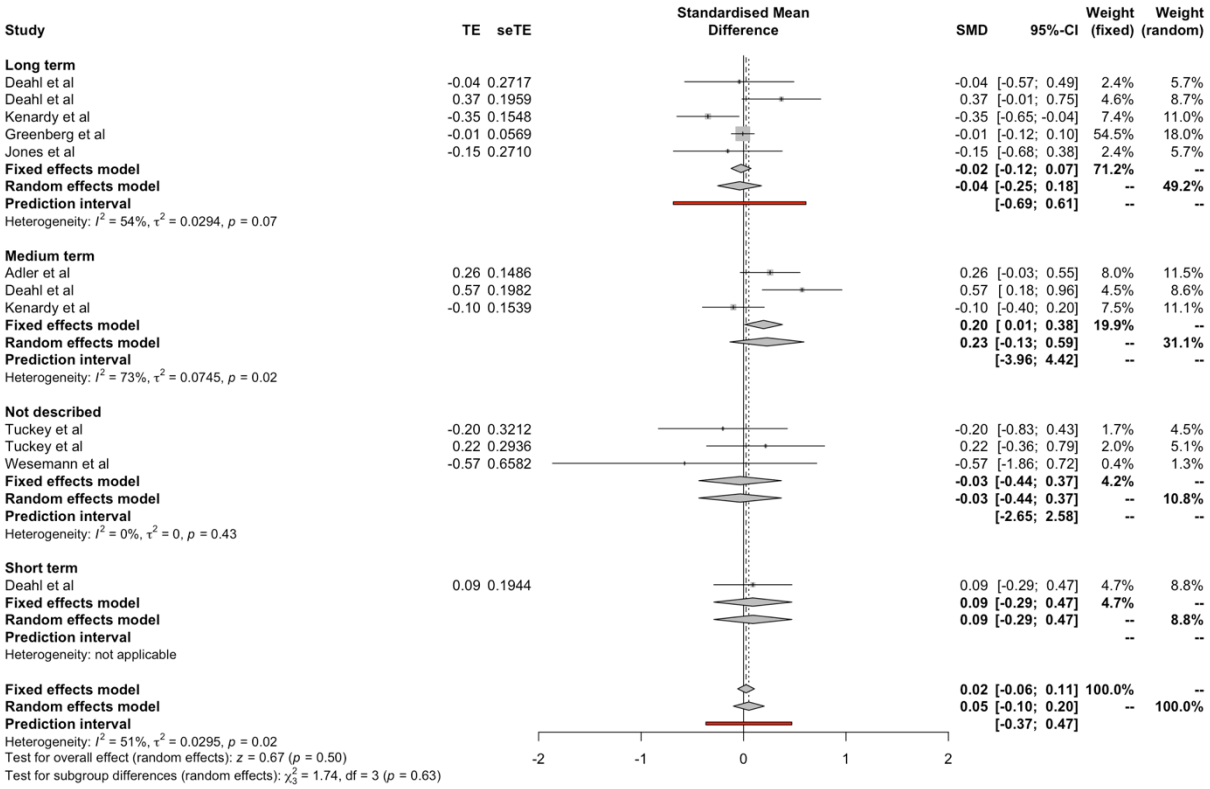
Study label	Outcome time	Effect size (*d*)	95% CI	Study Design	Intervention	Country
Wesemann et al (2020)	N/A	-0.57	-1.86-0.72	Non RCT	Crisis Intervention	Germany
Greenberg et al (2010)	Long	-0.01	-0.12-0.10	RCT	Trauma Risk Management	UK
Jones et al (2017)	Long	-0.15	-0.68-0.38	Non RCT	Trauma Risk Management	UK

A random effects models was calculated using the generic inverse variance method. A small positive treatment effect, favouring intervention, was observed in the short (SMD = 0.09, 95% CI = -0.29 to 0.47) and medium-term (SMD = 0.23, 95% CI = -0.13 to 0.59), however, these effects did not reach statistical significance. A small negative treatment effect was observed in the long-term (SMD = -0.04, 95% CI = -0.25 to 0.18), but this effect was not significant. These results may reflect the small number of studies that were reporting outcomes within the time points.

There were no significant differences found between the treatment effects reported between the three time points ($X^2 = 1.74$, $p = 0.63$), or the treatment effects across all the time points (SMD = 0.05, 95% CI -0.10 to 0.20). Figure 17 displays the results for the outcome of general psychological health.

Figure 17

Forest Plot of General Psychological Health

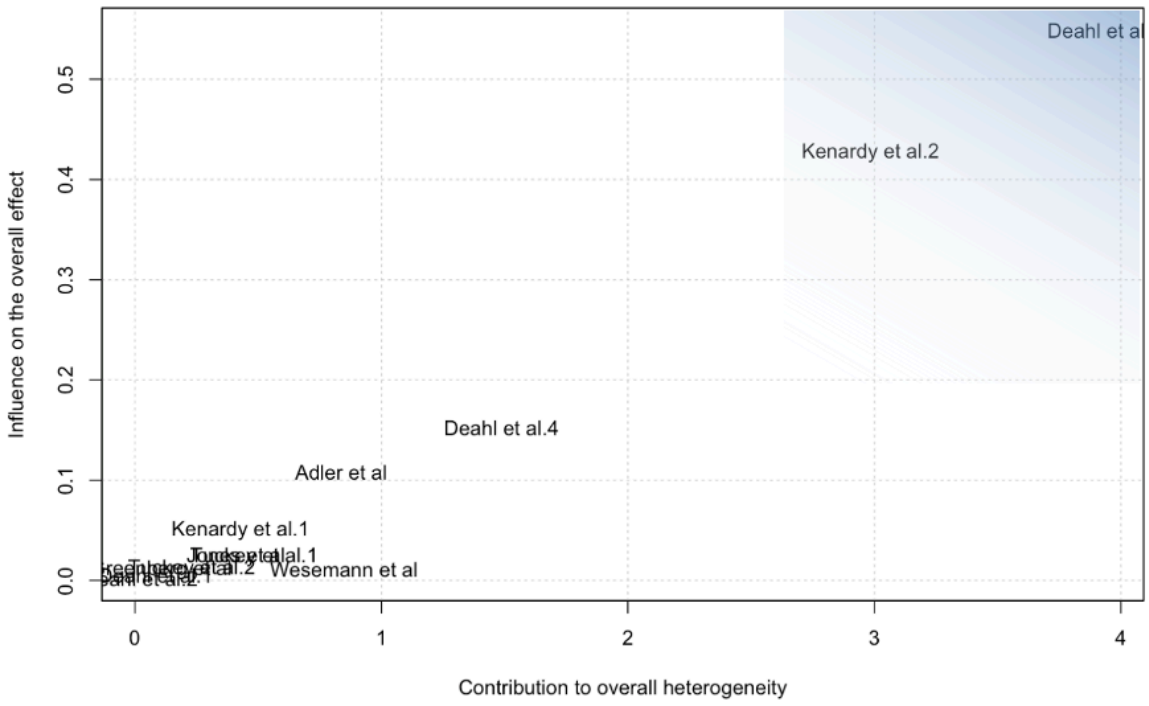


An acceptable level of heterogeneity in the primary studies was observed (Higgin's I^2 = 51%, tau^2 = 0.0295, p = 0.02).

The impact of influential primary studies. The Baujat plot (Baujat, Pignon, & Hill, 2002), exploring the impact of disproportionately influential studies, is presented in Figure 18.

Figure 18

Baujat diagnostic plot of sources of heterogeneity



Note. The vertical axis reports the influence of the study on the overall effect and the horizontal axis reports the discrepancy of the study with the rest of the literature. The shaded area is associated with influential and discrepant studies.

As can be seen from Figure 18, there were two studies in the area of the Baujat chart associated with influential and discrepant studies. Upon further review, for Deahl, et al. (2000) no specific risks of bias were identified that would warrant removal from the review. However, for Kenardy, et al. (1996) data was collected six months after a natural disaster and the researchers reported having no control over the intervention services that were offered to the participants. The treatments included in this intervention, although described as an early post-trauma intervention were likely to have been mixed with intervention strategies derived from other treatment modalities. Accordingly, the bias within the study likely confounded the treatment effects recorded, consequently, this study was removed from further analysis.

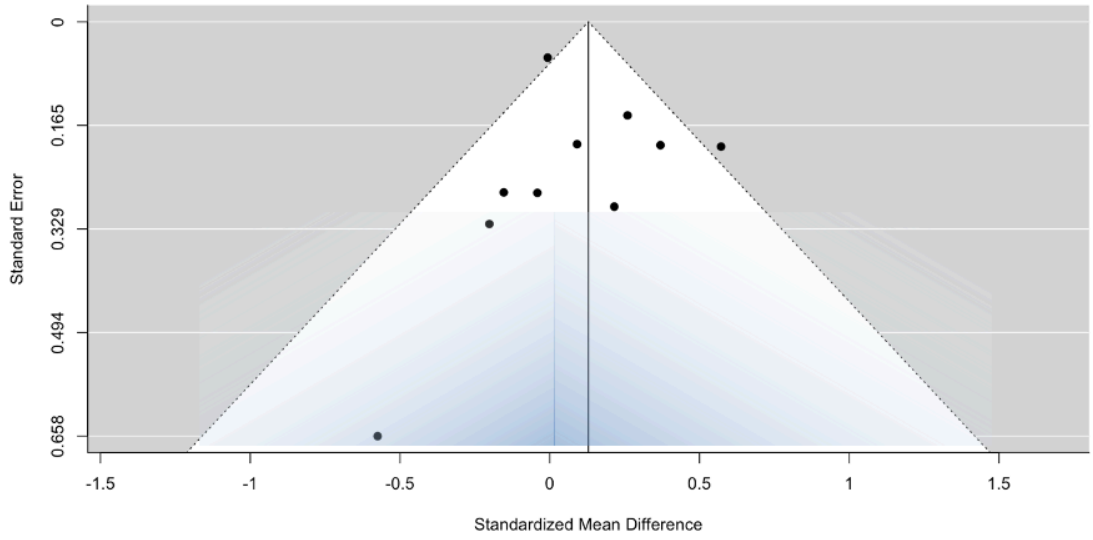
Upon Kenardy et al's (1996) removal from the analysis, the treatment effects did reach statistical significance in the medium term (SMD = 0.39, 95% CI = 0.09 to 0.69), favouring the interventions. The treatment effects did not reach statistical significance in the short (SMD = 0.09, 95% CI = -0.29 to 0.47), the long-term (SMD = 0.04, 95% CI = -0.14 to 0.21), or within the non-specified group (SMD = -0.03, 95% CI = -0.44 to 0.37). There were no significant differences between the treatment effects reported between the time points (X^2 = 4.42, p =0.11), or across all the time points (SMD = 0.1401, 95% CI -0.03 to 0.29).

The effect of risk of bias in the primary studies. The quality effect model reported a synthesis of SMD = 0.1401 (95% CI -0.0196 to 0.2997). The quality effects model evidences an approximate 8.6% increase relative to the uncorrected random effects estimate. Accordingly, when the synthesis includes information about the methodological quality of the studies there is a relatively small change in the weighted average of these studies and, therefore, the variation in the risk of bias ratings and the study design ratings does not affect the estimate of the weighted average treatment effect for depression.

The impact of publication and small study biases. Publication bias was assessed through the funnel plot, presented in Figure 19.

Figure 19

Funnel Plot of General Psychological Health



Note. The 95% confidence interval of the expected distribution of EFFECT is shown as an inverted "funnel". The area associated with publication bias and small study effects is highlighted in blue.

As can be seen from Figure 19, there is no clear evidence of publication bias in the distribution of treatment effects, in that, the area associated with publication bias and small study effects contains published studies. Therefore, no simulation of and adjustment for publication bias and small study effects was undertaken.

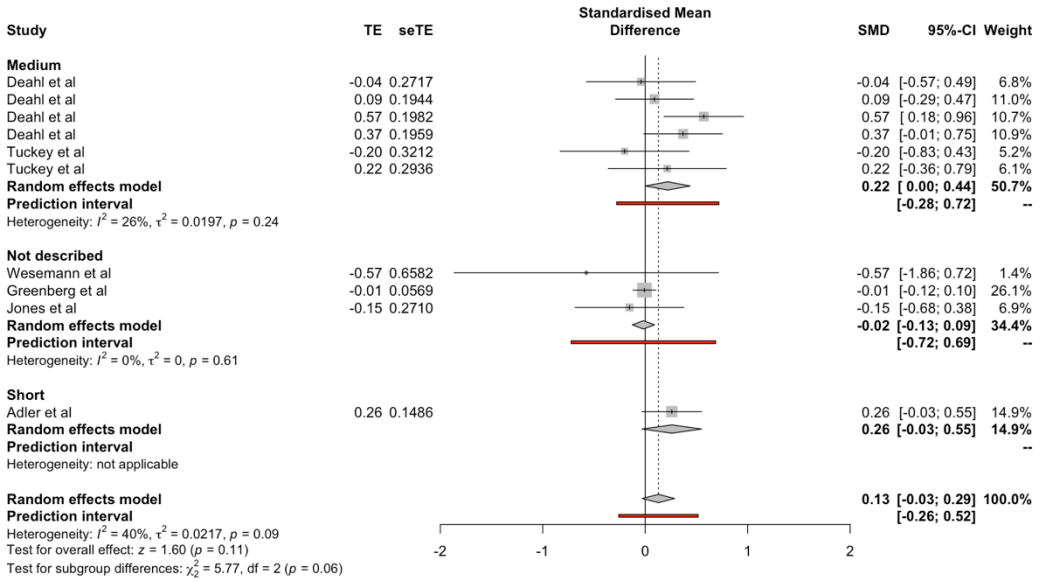
Subgroup Analyses and Meta-regression

To further explore the impact of study level covariates upon the efficacy of intervention interventions a series of subgroup analysis were conducted.

Length of intervention. A subgroup analysis was undertaken to examine differences in outcome dependant on the length of the intervention (see Figure 20). There was no statistically significant difference (X^2 =5.77, p = 0.06) between outcomes depending on the length of the intervention.

Figure 10

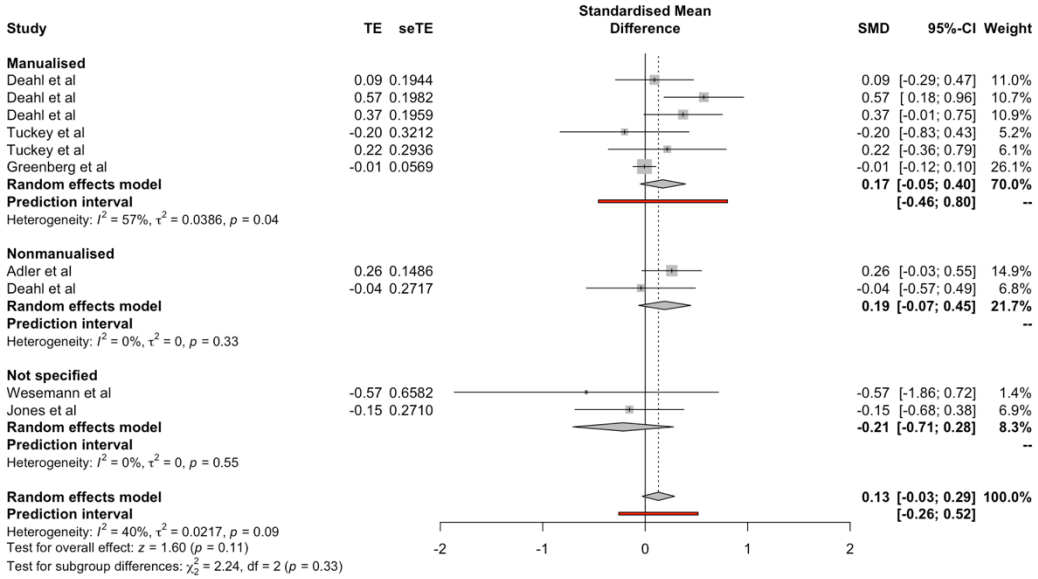
Subgroup Plot of the Length of Intervention Session for the Outcome of General Psychological Health



Manualised versus non-manualised interventions. A subgroup analysis was undertaken to examine differences in outcome dependant on the whether the intervention was manualised or not (see Figure 21). There was no statistically significant difference (X^2 =2.24, p = 0.33) between outcomes depending upon manualisation of the intervention used.

Figure 21

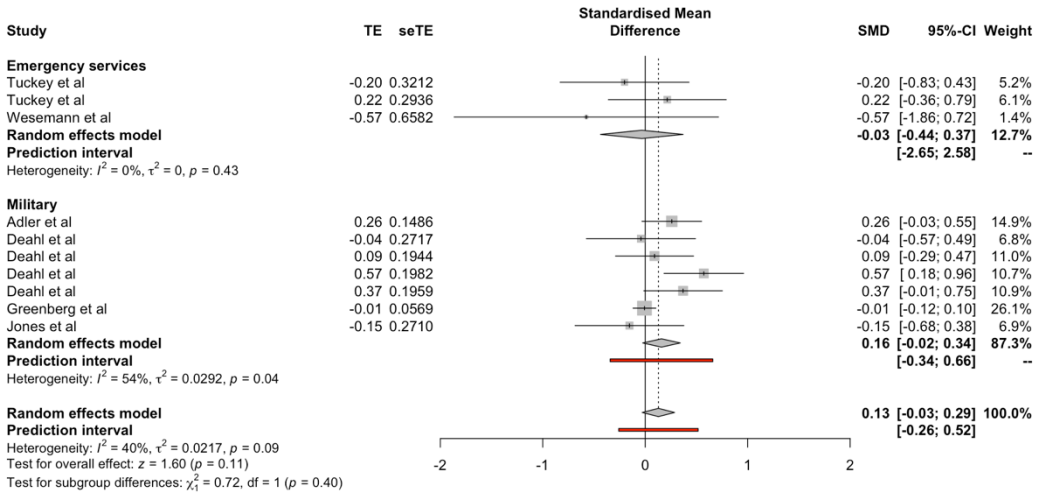
Subgroup Plot of Manualised Versus Non-manualised Intervention Sessions for the Outcome of General Psychological Health



Profession. A subgroup analysis was undertaken to examine differences in outcome dependant on the participants profession at the time of the intervention (see Figure 22). There was no statistically significant difference (X^2 =0.72, p = 0.40) between outcomes depending on the profession of participants.

Figure 22

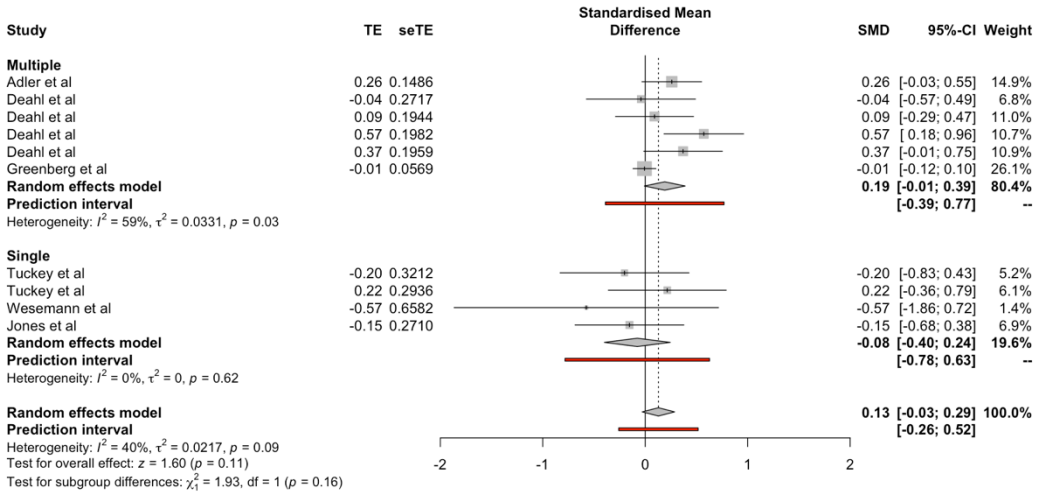
Subgroup Plot of Profession for the Outcome of General Psychological Health



Single or multiple incidents. A subgroup analysis was undertaken to examine differences in outcome dependant on whether participants experienced single or multiple incidents prior to the intervention (see Figure 23). There was no statistically significant difference (X^2 =1.93, p = 0.16) between outcomes depending the number of traumatic incident participants experienced.

Figure 23

Subgroup Plot of Single Versus Multiple Incidents for the Outcome of General Psychological Health



Discussion

Are Early Post-trauma Interventions Effective for Psychological Distress?

The aim of this meta-analysis was to examine the effectiveness of early post-trauma interventions on employees' psychological distress after they had been exposed to a potentially traumatic event at work. For the outcome of depression, the early post-trauma interventions showed significantly improved treatment outcomes compared to receiving no intervention (SMD = 0.19, 95% CI = 0.03 to 0.34). The short, medium and long-term groups showed a positive, but non-significant, treatment effect favouring early post-trauma interventions. The outcome of anxiety also showed significant improvement for people after the early post-trauma interventions compared to not receiving an intervention (SMD = 0.28, 95% CI = 0.12 to 0.44). The short-term and medium-term groups also showed a significant positive treatment effect for anxiety, which became non-significant at the long-term, meaning significant improvement in anxiety was observed up to six months post-intervention and became non-significant after seven months.

The outcome of general psychological distress (SMD = 0.05, 95% CI -0.10 to 0.20) showed non-significant results when comparing early post-trauma interventions to no intervention received. A significant treatment effect was found at the medium-term (SMD = 0.39, 95% CI = 0.09 to 0.69), however, indicating improved psychological health compared to no intervention at four to six months post intervention. Of note, the outcome of depression yielded significant results across time points while the outcome of general psychological health yielded insignificant results despite these outcomes sharing similar psychological constructs. A reason for this difference could pertain to the outcome of depression including more studies compared to general psychological health, enhancing statistical significance. Alternatively, this difference may have arisen from the different outcome measures used within the depression and general psychological health outcomes.

Lastly, the outcome of substance misuse (SMD = -0.1103, 95% CI -0.27 to 0.05) showed non-significant results. Albeit a non-significant effect, a small negative treatment effect was observed within substance misuse, meaning that people receiving the early post-trauma intervention showered higher levels of substance misuse compared to those not receiving an intervention.

Overall, these results suggest that early post-trauma interventions showed modest effectiveness in improving depression and anxiety for people who have experienced trauma at work. Early post-trauma interventions showed no effectiveness in improving general psychological distress or substance misuse overall.

The subgroup analyses explored differences between the circumstances and people attending the early post-trauma interventions and the administration of these interventions. The majority of subgroup analyses yielded non-significant results. These results suggest that

the differences between the early post-trauma interventions did not impact upon the effectiveness of the intervention. For instance, there were no differences observed in psychological distress when considering the number of traumatic incidents experienced by participants, whether the intervention was manualised or not, the length of the intervention sessions, or the profession receiving the intervention. One significant result indicated a difference between single and multiple sessions within the outcome of depression (X^2 16.87, $p < 0.01$). The results suggested people attending single sessions (SMD = 0.34, 95% CI = 0.20 – 0.48) showed greater improvement in depression compared to those who attended multiple sessions (SMD = -0.17, 95% CI = -0.41 to -0.07).

Comparison to Other Reviews

This meta-analysis was the first to examine the effectiveness of early post-trauma interventions by encompassing various early post-trauma interventions and outcomes. A previous meta-analysis by Everly et al. (1999) explored the evidence for early post-trauma interventions with vicarious trauma. Combining all psychological distress outcomes, including PTSD, depression, anxiety, the review by Everly et al. (1999) found a significant intervention effect ($d = 0.54$, $p < 0.01$), indicating beneficial outcomes associated with early post-trauma interventions. These findings compliment the current meta-analysis, which showed significant intervention effects for depression (SMD = 0.19, 95% CI 0.03 to 0.34) and anxiety (SMD = 0.28, 95% CI 0.12 to 0.44). The similarity in the findings offer modest consistency in the effectiveness of early post-trauma interventions. Although, the similarity of improved outcomes favouring these interventions did not extend to substance misuse or general psychological distress.

Another previous meta-analysis by van Emmerik et al. (2002) examined the effectiveness of single-session early post-trauma interventions. This review found that Critical Incident Stress Debriefing (CISD) did not improve psychological distress (SMD = 0.12, 95% CI = -0.22 to 0.47). The review, however, reported a positive effect for non-CISD interventions (SMD = 0.36). Although, the omittance of the relevant confidence intervals rendered the significance of this result uninterpretable. These findings contrast with the current findings, which suggested significantly improved outcomes for depression and anxiety for those receiving early post-trauma interventions. Interestingly, the subgroup analyses suggested that people attending single session interventions (SMD = 0.34, 95% CI = 0.20 – 0.48) showed significantly improvements in depression compared to those attending multiple sessions (SMD = -0.17, 95% CI -0.41 to -0.07), directly contradicting van Emmerik et al's. (2002) findings. A reason for this inconsistency in findings may pertain to van Emmerik examining pre and post assessment data rather than comparing early post-trauma interventions to a group which received no intervention. Another reason may involve the additional studies available since van Emmerik et al's. (2002) meta-analysis was published. For instance, van Emmerik et al. (2000) included five studies that assessed outcomes additional to PTSD, while the current analysis included 20 studies overall, with 10 studies included in the analysis of single and multiple sessions within the outcome of depression. Table 10 displays previous and the current meta-analysis findings.

Table 10

The Previous and Current Meta-analysis Findings into the Effectiveness of Early Post-trauma Interventions

Review	Intervention	Outcome	Effect
Everly et al (1999)	CISD	PTSD, depression, anxiety, anger, stress.	d = 0.54, p < 0.01
Van Emmerik et al (2002)	CISD	Psychological distress (mainly depression and anxiety).	SMD = 0.12, 95% CI -0.22 to 0.47
	Non-CISD		SMD = 0.36 (N/R)
Current review	Various	Depression	SMD = 0.19, 95% CI 0.03 to 0.34
		Anxiety	SMD = 0.28, 95% CI 0.12 – 0.44
		Substance misuse	SMD = -0.11, 95% CI -0.27 to 0.05
		General psychological distress	SMD = 0.05, 95% CI -0.10 to 0.20

N/R = not reported

Limitations of the Meta-analysis

There were several limitations of this meta-analysis that possibly impacted on the conclusions drawn. Firstly, while the current meta-analysis included more studies than previous reviews, the separation of outcomes limited the number of studies within each outcome. The low number of studies per outcome may have hindered the accuracy of the effect size obtained. Indeed, a possible reason why the subgroup analyses achieved non-significant results may be due to the small number of studies involved. Only the outcomes of depression and general psychological health could be further explored with subgroup analyses. This limited subgroup analyses hinders the ability to understand differences between types of early post-trauma intervention, or the circumstances around the interventions that could impact their effectiveness. As such, while the current results offer some understanding into the differences between mental health outcomes, the results remain broad and do not offer further understanding into other differences. A notable reduction in the number of studies was also observed when exploring the outcomes of substance misuse and general psychological health. Consequently, the small number of studies within each outcome hindered more comprehensive or conclusive interpretation of the results.

Another limitation of this review pertains to the heterogenous nature of the results obtained from the studies included. The outcomes contained various outcome measures used. This heterogeneity reflects the literature available, but the heterogeneity impacts the accuracy of the interpretation of the results as each outcome measure used had variable psychometric properties. Additionally, the small number of studies meant that some outcome measures could not be examined within the effectiveness of early post-trauma interventions. As such, the current review could not examine outcomes relevant to early post-trauma interventions, such as anger, perceived support, quality of life, coping, military-specific outcomes, or self-related outcomes (e.g., self-efficacy).

Future Research and Clinical Implications

The limited studies included in this meta-analysis hindered a comprehensive examination of the different aspects of early post-trauma interventions. Hence, and similar to previous reviews (e.g., Anderson et al. 2020; Everly et al. 1999) more research within the literature is required to aid more accurate examination of the effectiveness of early post-trauma interventions. This research could include standardised measures of additional outcomes reflecting mental health, e.g. means of coping or quality of life (Tuckey & Scott, 2014). Additionally, reflected in the current analyses' inability to explore less researched outcomes, future research could explore the effectiveness of early post-trauma interventions on anger, sleep, or perceived support.

Clinically, this meta-analysis review adds to the empirical support for the use of early post-trauma interventions within organisations. This empirical support lends some balance towards the ethical dilemma faced by organisations who implement early post-trauma interventions that want for empirical support. These findings can be applied to clinical

settings in terms of the types of mental health outcomes that could be supported by early post-trauma interventions, i.e., depression and anxiety. These findings, however, do not offer understanding into how these interventions could be implemented. Hence, these findings could be integrated into other reviews that offer such guidance, e.g., Richins et al. (2019).

Conclusions

The current meta-analysis lends some support for early post-trauma interventions helping workers who experience trauma at work. In particular, the effectiveness of these interventions were shown within the outcomes of depression and anxiety. No support for these interventions was found for general psychological health. Indications of negative interventions effects were found within substance misuse. Reflecting previous literature, these findings offer both consistency (e.g., Everly et al., 1999; Richens et al., 2019), and inconsistency (e.g., van Emmerik et al. 2002) with previous findings. The current analysis included greater studies than previous meta-analyses, however, the heterogenous nature of the studies made accurate and comprehensive examination difficult. Overall, this meta-analysis adds to increasing empirical support for early post-trauma interventions for people experiencing trauma at work. However, the findings should be interpreted with caution due to the limitations of the research available. Hence, further research with high quality design is needed to enhance clarity and further evaluate early post-trauma interventions.

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2. THE EMPIRICAL PAPER: MENTAL HEALTH PRACTITIONERS' EXPERIENCE OF TRAUMA RISK MANAGEMENT

Abstract

Aim

Organisations, like the NHS currently employ immediate post-trauma interventions such as Trauma Risk Management (TRiM) that want for empirical support. The limited research into people's experiences of early post-trauma interventions after experiencing a trauma at work highlight discrepancies between objective measures and subjective reports, advocating the use of qualitative analysis. The current research aimed to develop better understanding into mental health practitioners' experience of TRiM within a mental health service.

Method

Semi-structured interviews were conducted with six mental health practitioners who had attended TRiM, after experiencing a trauma at work within 12 months of their experience of TRiM. Data were analysed using Interpretative Phenomenological Analysis with focus on participants' personal meaning and sense-making in their experience of TRiM.

Findings

Two superordinate themes were identified. The first superordinate theme 'The Aftermath of the Trauma' detailed participants experiences of the magnitude of the traumatic incident. The second superordinate theme 'Re-visiting the Trauma' described participants' experiences within talking about the trauma.

Conclusion

The findings suggested that mental health practitioners experienced significant trauma reactions after traumatic incidents without disclosing this distress. Practitioners' valued acknowledgement and appreciation of their role in the traumatic event, and some grew from the trauma. Making sense of the trauma during the TRiM process appeared to help practitioners organise the trauma memory and create new perspectives, lessoning their shame and guilt related to the trauma. Practitioners described a peer-delivered intervention facilitated sharing their experiences, however, for some this familiarity left them unable to disclose the extent of their distress.

Introduction

Trauma at Work

Distressing and life-threatening events, such as serious accidents, violence and witnessing death or serious injury can prompt an emotional response, known as trauma (Kessler et al., 2017). Some occupations incur traumatic events, for instance the military (Porter, Hoge, Tobin, Donoho, Castro, Luxton & Faix, 2018), emergency response services (MacEachern, Jindal-Snaps, & Jackson, 2011), healthcare workers, police officers, and prison workers (Lee, Lee, Yoon, Lee & Kang, 2020). Mental health services incur trauma at work, considering they offer support to people presenting with psychological distress and risk towards themselves or others (The NHS Confederation, 2012). Indeed, mental healthcare practitioners experience violence at work, witness service users engage in self-harming or suicidal behaviours, and witness or become aware of the death of a person within services (Birmingham and Solihull Mental Health Foundation Trust, 2014; Price, Baker, Bee & Lovell, 2015; Kasmi, Duggan & Vollm, 2020; Royal College of Nursing, 2018). Between 2009-2019, 29% of suicides in the United Kingdom involved people within mental health services; and in 2019 67 suicides occurred in in-patient services (The National Confidential Inquiry into Suicide and Safety in Mental Health, 2022). In 2016/2017, 33, 820 physical assaults against staff working in mental health services were reported (Royal College of Nursing, 2018).

Immediately after traumatic events people can experience shock, fear, horror, and psychological distress (Bryant, 2016; Carleton, et al., 2018; Paton & Violanti, 2011). Trauma reactions include re-experiencing the traumatic event, through images and thoughts; dissociative states, such as numbing and derealisation; avoidance of thoughts, people, or places associated with the traumatic event; and arousal, such as difficulty sleeping, irritability,

hypervigilance and concentration difficulties. Approximately one month after the event acute trauma responses tend to subside (Bryant, 2016). For some people, however, the psychological distress develops into mental health difficulties, including Post-traumatic Stress Disorder (PTSD), anxiety, depression, suicidal behaviours, and maladaptive coping strategies, e.g., drug and alcohol abuse (Carleton, et al., 2018; Stanley, Hom & Joiner, 2016). Previous trauma, the severity of the traumatic event, guilt and shame, little social support and additional life stress all increase the risk of people developing mental health difficulties after a trauma (Brewin, Andrews & Valentine, 2000; Cunningham, Davis, Wilson & Resick, 2018; Geoffrion et al., 2022).

Mental health issues, such PTSD symptoms appear common in healthcare settings with prevalence rates varying between 6% to 96% (Schuster & Dwyer, 2020). Despite this high prevalence, healthcare practitioners report that admitting distress would result in negative appraisals by colleagues and detrimentally impact their career (Greenberg Henderson, Langston, Iverson & Wessely, 2007; Knaak, Mantler & Szeto, 2017; Watson & Andrews, 2017). Conversely, resilience to trauma appears enhanced by communication and social support (Hansford & Jobson, 2021; Meredith et al., 2011). Organisational effects of trauma include increased accidents and errors at work, reduced work productivity, and increased sickness absence (MacFarland & Bryant, 2007; NHS Digital, 2020). Considering these deleterious personal and occupational effects prompted by traumatic events, mental health services hold a moral and legal duty in supporting their practitioners exposed to trauma (The Management of Health and Safety at Work, 1999).

Early Post-trauma Interventions

Early post-trauma interventions pose a solution for organisations to mitigate risks associated with trauma. These interventions include Critical Incident Stress Debriefing (Mitchell, 1983), Psychological Debriefing (Dyregrov, 1989), Critical Incident Stress Management (Everly & Mitchell, 1999), Psychological First Aid (Hobfoll, Watson, Bell, Bryant & Brymer, 2007), and Trauma Risk Management (Jones, Roberts, & Greenberg, 2003). The pervading design across these interventions involves easing psychological distress following exposure to trauma (Raphael & Wilson, 2000). Early post-trauma interventions apply crisis intervention and educational processes to explore the traumatic event, to normalise reactions and to instil helpful coping strategies (Richins et al., 2019). These interventions were not designed to prevent or treat PTSD or as a therapy for trauma (Regal & Dyregrov, 2012; Ruck et al., 2013).

Previous research suggested that early post-trauma interventions detrimentally impacted people's mental health; however, criticism of this research has since undermined these conclusions (Richins et al., 2019). To overcome the perceived shortcomings of earlier interventions, however, new early post-trauma interventions emerged including Trauma Risk Management and Psychological First Aid. Nonetheless, this research influenced the National Institute for Care and Excellence's (NICE) recommendation against the use of early post-trauma interventions for Post-traumatic Stress Disorder (NICE, 2018), and hindered research and best-practice guidance (Hawker, Durkin & Hawker, 2011). Organisations, therefore, appear left with an ethical dilemma of supporting employees exposed to trauma with early post-trauma interventions which want for empirical support and national guidance.

An early post-trauma intervention adopted by some NHS Trusts across England is Trauma Risk Management (TRiM). TRiM was originally developed within the United Kingdom's Armed Forces (Jones, Roberts & Greenberg, 2003). TRiM consists of training staff within a service to lead and deliver immediate post-incident support to peers within the service, in the form of a Trauma Incident Briefing (TIB) and Risk Assessment Sessions. The TIB aims to deliver factual information about the incident to staff, help normalise trauma reactions, and provide information about coping and additional support available (Jones et al. 2003). Risk Assessment Sessions apply psychological risk assessment, identifying personal and situational risk factors, to detect people at risk of developing mental health difficulties (Greenberg, Langston, & Jones, 2008). The aim of TRiM does not involve resolving or preventing mental health issues but to screen those at risk of psychological distress. With unresolving psychological distress after a traumatic event, TRiM facilitates engagement with professional support services (Whybrow, Jones & Greenberg, 2015). TRiM's function, therefore, pertains to assessment and triage, not trauma therapy. Other organisations have since applied TRiM including the Police service (Hesketh & Tehrani, 2018) and NHS mental health trusts (Flaherty & O'Neil, accessed April 2022).

Discrepancies in the Research

Research exploring the effectiveness of early post-trauma interventions show inconsistent findings (e.g., Maglione et al., 2021; Richins et al. 2019). Of the early post-trauma interventions found to have no impact on objective measures of mental health, 78% were evaluated as beneficial by the people attending the intervention (Richens et al. 2019). This discrepancy implied early post-trauma interventions provide benefits not captured by objective measures (Deahl, Srinivasan, Jones, Thomas, Neblett, Jolly, 2000). For instance, much research focuses the impact of these interventions on reducing PTSD symptoms (Lewis,

2003; Maglione et al. 2021; Rose, Bisson, Churchill, & Wessley, 2002), despite these interventions not being designed to prevent or treat PTSD (Regal & Dyregrov, 2012; Ruck et al. 2013).

The discrepancy between objective measures and subjective reports advocates the use of qualitative inquiry to understand people's perception of these interventions. Qualitative research focuses on exploring meaning and context, which quantitative methods largely neglect through the use of specific but constrained measures (Yardley, 2000). Qualitative research, therefore, could highlight areas of evaluation for these interventions that objective measures previously neglected and guide future quantitative research. There currently remains, however, very limited qualitative research exploring early post-trauma interventions.

Qualitative Research: Self-report Evaluations

The qualitative research exploring early post-trauma interventions remains largely limited to self-report evaluations administered through questionnaires completed independently by participants. These evaluations suggested people find early post-trauma interventions helpful and meaningful (Keene, Hutton, Hall & Rushton, 2010). Subjective reports highlighted that talking about traumatic events helped people identify and express thoughts and feelings, reducing thoughts about the event (Robinson & Mitchell, 1993). People reported that these interventions offered understanding into why they were affected by the trauma. This understanding appeared to lesson guilt or shame experienced by the person, which enabled people to talk about their distress (Robinson & Mitchell, 1993). Another reason people found early post-trauma interventions beneficial pertained to sharing experiences with others. Talking about the traumatic incident and the subsequent reactions

with others appeared to help people accept the incident happened and normalise their inner experiences (Robinson & Mitchell, 1993).

These findings, however, were not founded on systematic qualitative analysis. Systematic analysis, whereby researchers use empirically reliable procedures to analyse the data, allows for explicit understanding into the establishment of the findings. Therefore, a lack of systematic analyses undermined the findings' robustness. Additionally, self-report evaluations constrained people's answers to pre-determined questions, precluding dialogue and inquiry into people's experiences. Therefore, self-report evaluations restrict comprehensive understanding of people's experiences and create spurious conclusions. More systematic analyses would provide reliable findings and, therefore, begin better understanding into how people experience these interventions.

Qualitative Research: Systematic Analyses

Of the known research, two studies apply systematic qualitative analyses to understand people's experiences of early post-trauma interventions; neither of which occurred in mental health settings. Research exploring TRiM within the military suggested recipients reported the intervention helpful when experiencing trauma (Greenberg. Langston, Iversen & Wessely, 2011). Participants also reported the usefulness of having a peer delivered system (Greenberg et al., 2011). The negative aspects of TRiM pertained to concerns around confidentiality, inexperienced TRiM practitioners lacking credibility, and a lack of leadership support (Greenberg et al., 2011).

The grounded theory analysis within this research enhanced the systematic rigour of the findings, the research consisted of several limitations. The large amount of people included in the research, some 330 individuals, and the use of pre-determined categories

within the analysis restricted a rich or novel understanding into people's experiences of TRiM. Indeed, using pre-defined categories limits the possibilities for subtle, imaginative, context-sensitive, and elaborate interpretation of the data (Cullum-Swan & Manning, 1994). Consequently, there remained little understanding as to what the intervention was like to go through, why TRiM was deemed helpful when experiencing trauma, or any change or learning that occurred, or outcomes relevant to guide future quantitative research.

Another study exploring people's experiences of an early post-trauma intervention offered more in-depth understanding. A search and rescue crew responding to a terror attack discussed their experience of a group holistic debriefing (Firing, Johansen & Moen, 2015). Findings suggested that leadership support created a safe and reflective learning environment. Social support appeared to mediate the learning process through normalising people's experiences, and increasing relations and trust between people. The sharing of emotions also appeared to engender deeper relationships between people.

Additionally, this research identified that participants experienced emotional changes during the debriefing. After repeatedly talking about the event participants experienced a disinhibition of emotion and reduction in physiological activation of emotion. During the process of emotional disinhibition healing took place, which allowed for construction of knowledge related to the event. The research findings also highlighted that the debriefing helped people develop a common meaning through hearing others' experiences of the event. Hearing these experiences helped people make sense of their own experiences and relate to the event differently.

The authors of the research concluded social support and increased trust enhanced people's willingness to participate and express their thoughts and emotions. Emotional

changes occurred through repeated discussions about the event, enabling construction of knowledge. A common meaning within the group was developed which helped people relate less to the event and more to the narrative of the terror attack as an experience.

Firing et al. (2015) developed a rich understanding into people's experience of an early post-trauma intervention. The study's findings enhanced understanding into how learning occurred, emotional processes, interpersonal relationships, and the construction of meaning of the traumatic event. Firing et al. (2015) findings also highlight relevant psychological theory that underpins understanding people's experiences after traumatic events, including the role of cognitive and emotional processing. Exploring trauma memories can help people process this memory (Ehlers & Clarke, 2000) construct new meaning (Enosh & Buchbinder, 2005), challenge problematic cognitions (e.g., self-blame) (Cahill, Rothbaum, Resick, & Follette, 2009), and process emotions connected to the traumatic event (Pascual-Leone, 2019).

Firing et al. (2015) conceded that their focus on a learning perspective offered one of many possible interpretations of people's experience of this intervention. This focus may have restricted understanding into other novel processes, such as more personal experiences. Lastly, the research explored a group intervention, leaving exploration of people's experiences of an individual intervention unexplored. Firing et al. (2015) offered understanding into people's experiences of early post-trauma interventions, however, this understanding continues to remain an under researched area.

Rationale for the Current Research

The discrepancy between objective measures and subjective reports when examining early post-trauma interventions advocates the use of qualitative analysis. Qualitative analysis

can offer rich understanding into people's experiences of these interventions. This understanding may illuminate neglected aspects of people's experiences of these interventions, possibly identifying future objective measures for quantitative studies. To date, however, there remains limited qualitative research into early post-trauma interventions.

Limited understanding into people's experiences of early post-trauma interventions raises concerns considering their employment by organisations. The early post-trauma intervention employed by NHS Trusts, TRiM, has no empirical understanding into how people experience this intervention after exposure to traumatic events at work, nor empirical exploration within mental health settings. Organisations, like the NHS, therefore, employ an intervention wanting for empirical support in understanding people's experiences of this intervention within mental health services. This dearth of research shows the imperativeness of understanding people's experiences of TRiM, particularly within NHS mental health services.

Understanding people's experiences of going through TRiM requires a qualitative inquiry with similar epistemological focus, to ensure the research aims and analysis align in their theoretical approach of psychological knowledge. One form of inquiry with a similar epistemological focus includes Interpretative Phenomenological Analysis (IPA), which intends to explore how people make sense of their life experiences (Smith, Flowers & Larkin, 2009). IPA's epistemological focus lay within critical realism, which posits that reality exists independent of the observer but that reality cannot be known with certainty (Coyle, 2016). IPA's epistemology, therefore, pertains to phenomenology, i.e., people's experience of something, which varies between individuals. In comparison, other epistemological approaches appear incompatible with the current research's epistemology. For instance,

qualitative inquiry with relativist epistemological positions work under the assumption that reality is dependent on how people come to know reality, suggesting different versions of reality exist (Coyle, 2016). For instance, Discourse Analysis focuses on understanding language and the construction of reality (Lyons & Coyle, 2021). Consequently, approaches with an epistemological position of critical relativism were deemed appropriate qualitative inquiries for exploring people's experiences of going through TRiM.

Aim of the Current Research

The current research, therefore, aims to develop a better understanding into mental health practitioners' experience of TRiM within a mental health service through applying IPA.

Method

Context

This study was conducted within a NHS Mental Health Trust which incorporated inpatient and community services. The NHS service had developed a TRiM team consisting of staff, trained in TRiM, working in the mental health service. The TRiM team consisted of a lead and managers, that managed and coordinated the TRiM team. TRiM managers and practitioners offered immediate post-incident support to peers within the service. Based on the NICE guidelines for PTSD (NICE, 2018) and TRiM training, the TRiM policy identified a traumatic incident as *'any incident that produces a high level of emotional response during, immediately post-incident or sometime after'.* Within the policy, incidents expected to prompt a referral to TRiM included the death or threatened death of staff or service users, and serious or threatened injury, violence, or abuse to staff or service users. The TRiM support consisted of a Trauma Incident Briefing (TIB), a group meeting where factual information of the

incident, common reactions to trauma, and ways of coping were communicated. Following this, as per the TRiM model, staff involved in the incident were offered the opportunity for an individual or group meeting. These additional meetings involved Risk Assessment Sessions aimed to identify those at risk of developing psychological problems after the traumatic incident. The Risk Assessment Session involved talking about events and people's thoughts before, during and after the traumatic incident. Table 1 displays the TRiM timeline and process after a traumatic incident.

The University of Birmingham Research Governance and Ethics Team sponsored the current research (Appendix 1). The Health Research Authority (Appendix 2) and the local Research and Development department (Appendix 3) ethically approved the research.

Table 1

The TRiM Timeline and Process

Time Frame After the Traumatic Incident	TRiM Process
0-24 hours	TRiM referral is made after a traumatic incident. The TRiM lead triages the referral and if suitable allocates a TRiM manager. TRiM manager contacts referrer to gain further details about the incident (nature of the incident, location, and number of staff involved), discusses the incident with TRiM managers and considers appropriate response. Decisions to offer a TRiM intervention are made by the TRiM lead or managers.
24-72 hours	Planning phase: Once relevant information is received the allocated TRiM manager will organise a planning meeting with the relevant service managers and a Trauma Incident Briefing (TIB) is arranged. The referring manager ensures all staff identified will be able to attend the TIB and any subsequent assessment meetings.

Time frame after the traumatic incident	TRiM Process
72 hours	Intervention phase: The allocated TRiM manager and TRiM practitioners conduct a TIB, conduct initial risk assessment sessions, and liaise with local service managers regarding further support required for staff.
28 days to 3 months	Any follow-up risk assessment sessions occur at 28 days after the traumatic incident and if necessary after 3 months. Throughout the TRiM process, staff can be referred to Occupational Health for specific trauma interventions.

Design

The current research applied a qualitative design, with a phenomenological position that focused on participants' lived experience. Interpretative Phenomenological Analysis (IPA) (Smith, Flowers & Larkin, 2009) was used due to IPA's focus on personal meaning and sense-making in a particular context, for people who share a particular experience (Smith et al., 2009). By using IPA, the research aimed to capture individuals experience, i.e., what it was like to live a particular situation.

Inclusion Criteria.

Inclusion criteria for the research included participants who had experienced exposure to a traumatic incident at work and attended TRiM as a result. Participants included having attended a Trauma Incident Briefing and at least one individual Risk Assessment Session within the past 12 months at the time of recruitment, to create a homogenous participant group and to ensure participants had completed the full TRiM process.

Recruitment

Recruitment occurred between October 2021 to April 2022. Over a number of weeks, Mental Health Practitioners were contacted by TRiM practitioners to gain their consent for the researcher to contact them. People who agreed to be contacted by the researcher were then introduced to the research, gave their informed consent to take part in the research, and underwent an interview.

Informed Consent

Informed consent was considered a process (Wiles, Heath, Crow & Charles, 2005). The first stage of consent involved TRiM practitioners contacting potential participants with a brief summary of the research and to seek consent for the researcher to contact them. Upon consent to contact, the researcher provided a Participant Information Sheet describing the research in detail (Appendix 4). Potential participants were then given a minimum of 48 hours to decide whether to participate. Once they agreed to participate in the research, they provided written consent (Appendix 5) and demographic information (Appendix 6), and arranged an interview. Immediately prior to the interview, participants provided their verbal consent to participate in the research. Through the interview, participants' consent was constantly monitored, e.g., through monitoring participants' distress. After the interview, participants were given one week to withdraw before transcription and anonymisation of their data. After the interview, participants were debriefed to assess whether they were experiencing distress and required signposting to further support.

Semi-structured Interviews

Semi-structured interviews with participants lasted approximately one hour. The interviews took place and were recorded and stored on Microsoft Teams on an NHS Trust computer. Both participants and researcher were in private rooms. The interview schedule (Appendix 7) was developed between the researcher and the researcher's supervisor, a Clinical Psychologist with experience as the TRiM lead. The interview schedule consisted of open-ended questions regarding participants introduction to TRiM, their experience of the Trauma Incident Briefing and Risk Assessment Sessions, their experience of their TRiM practitioner, as well as the overall process going through TRiM. Questions included additional prompts to elicit comprehensive answers from participants. Once the interviews were transcribed on an NHS Trust computer, the interviews were deleted.

Participants

Six participants gave informed consent to take part in the current research. A further four practitioners consented for the researcher to contact then declined to participate. Participants attended a Trauma Incident Briefing, and between one and three Risk Assessment Interviews over three months after the traumatic incident. Table 2 displays participants' pseudonyms.

Table 2

Participants' Pseudonyms

Participant	1	2	3	4	5	6
Pseudonym	Ella	Jade	Jasmin	Isobel	Sophie	Ben

The Trauma Incident Briefing was conducted by a different TRiM practitioner to those that facilitated the Risk Assessment Sessions. Participants were given a pseudonym and

limited demographic information was presented to maintain their anonymity. Table 3 displays participants' relevant demographic information.

Table 3

Participants' Demographic Information

Demographic Information	
Sex	5 Females 1 Male
Age in years	24 – 47 years old
Ethnicity	5 White British 1 Pakistani
Professions	Nursing Psychology Psychiatry
Length of time in the service	1.5 – 17 years
Previous experience of trauma	2 experienced previous trauma (no intervention received) 4 did not report previous trauma

Analysis

The IPA guidelines described by Smith, Flowers and Larkin (2009) were followed. Firstly the participant interviews were transcribed verbatim. Each transcript was then systematically read through to immerse the researcher in the data, with initial thoughts and interpretations noted. The transcripts were then thoroughly coded with comments capturing the ways in which the participants' talked about, understood and thought about their experience (Appendix 8). The different ways of capturing participants' language and understanding and the researcher's interpretations were denoted through descriptive, linguistic and conceptual codes. These initial codes were then reduced to emergent themes that aimed to identify patterns within the data for each participant. To ensure the themes remained true to

the data and to maintain the idiographic nature of IPA, the researcher created a table to connect the emergent themes with quotes from the transcript (Appendix 9). A vignette for each participant was created after individual themes were created (Appendix 10). After the researcher completed this analytic process for each participant, themes were merged across participants producing the superordinate themes (Appendix 11). The analysis was an iterative process, whereby the researcher re-visited the transcript and initial codes to evolve the themes for within and across participants.

[1]Researcher Reflexivity

Clinically and personally, I have not experienced TRiM. I gained knowledge of TRiM through reading the TRiM manual and through conversations with my research supervisor, who has experience leading TRiM within the service.

I prescribed to a critical realist perspective (Bhaskar, 1978), which purports that reality exists independent of the observer but that reality cannot be known with certainty. In that, individuals' experience different parts of reality that engender different meanings.

I have taken part in qualitative research assignments in previous degrees, but this research was my first time conducting research using IPA. To support my analysis, my research supervisor had significant experience using IPA. I also attended regular qualitative analysis group workshops facilitated by the university, which offered additional supervision from clinical tutors with significant experience using IPA and feedback on the quality of my analysis.

[1] This section is written in the first person to reflect the active role the research had within the research.

Triangulation was achieved through having multiple observers of the research. For instance, discussions I had with my research supervisor highlighted my proclivity towards psychologically conceptualising, and applying temporal order to, the themes within the data. From these insights, myself and my supervisor were able to bring a more phenomenological focus to constructing the themes without constraints of chronology.

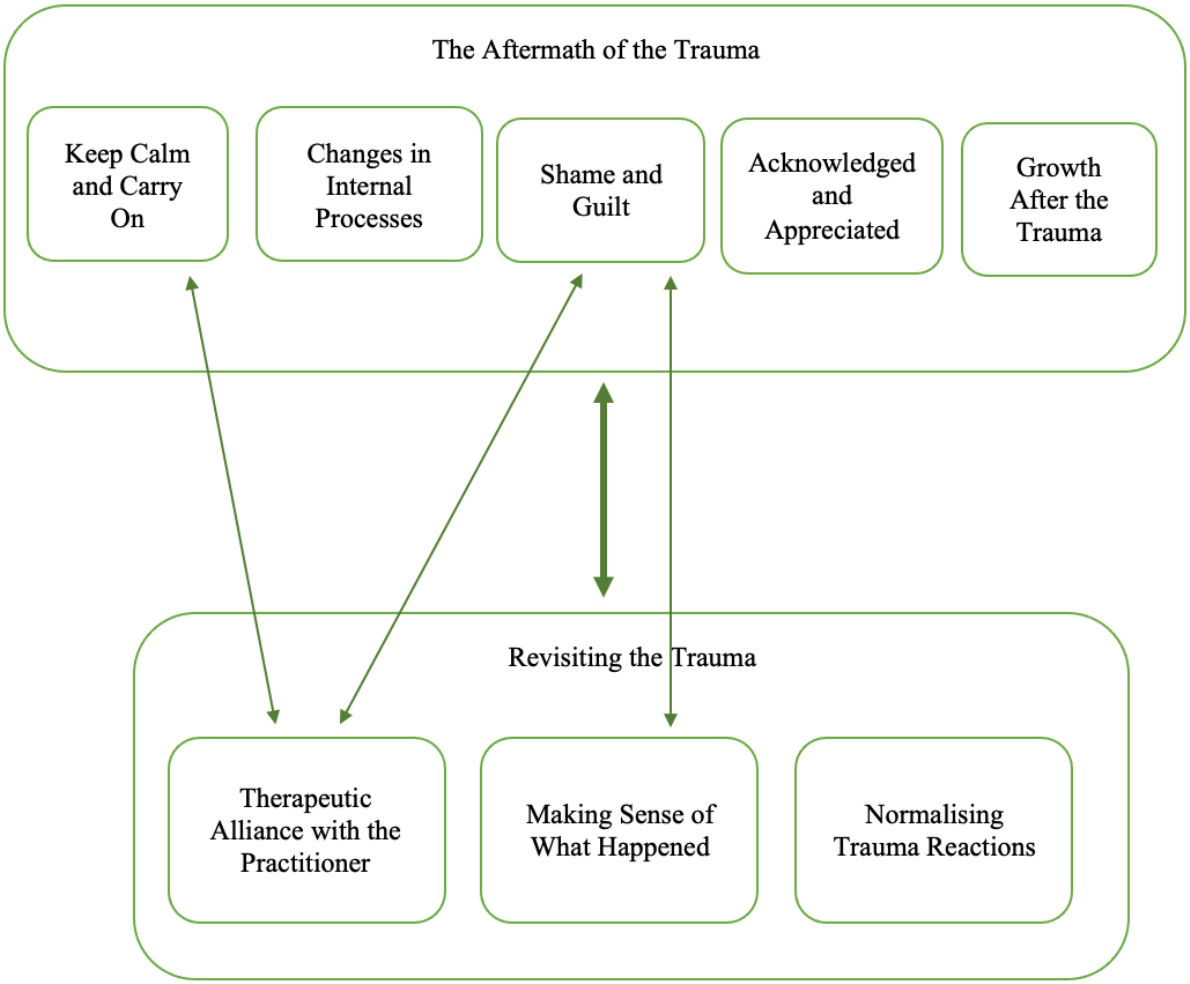
I engaged in continuous reflection throughout the course of my research in the form of a reflective diary. One important reflection involved noticing I summarised the participant's answers during my first interview, similar to that in my clinical practice. Subsequent research supervision helped me change summaries to further inquiry of participants' experiences in the subsequent five interviews.

Findings

The types of traumatic incidents experienced by participants in the current research included responding to medical emergencies where service users attempted suicide and either survived or died as a result. TRiM consisted of practitioners attending a Trauma Incident Briefing and at least one Risk Assessment Session. Using IPA, two superordinate themes emerged from the data (see Appendix 12 for a table displaying the superordinate and subthemes themes and participants' contributions to the themes). Figure 1 displays the map of the superordinate and subthemes and their inter-relations.

Figure 1

Map of the Superordinate and Subthemes and Their Inter-relations



Superordinate Theme One: The Aftermath of the Trauma

The superordinate theme of 'The Aftermath of the Trauma' encapsulates the magnitude of the traumatic incident participants' experienced and their journey through the trauma's impacts. Within this theme lay five subthemes, firstly the theme of 'keep calm and carry on', moving onto 'changes in internal processes', 'shame and guilt', 'acknowledged and appreciated and finally 'growth after the trauma'.

Of all the incidents participants had been involved in as mental health practitioners, the incident prompting their attendance to TRiM stood out. Ella offered her perception of the

magnitude of the traumatic incident she had been involved in. Ella's use of the word 'horrific' denotes the gravity of the incident: "that feeling of seriousness that this was something horrific that had happened and almost putting a big highlight over it like out of all the incidents I've been involved in one is standing out" (Ella, line 142-144). Jasmin and Isobel added that the seriousness of the traumatic incidents was not something they had previously experienced, they conveyed a sense of shock and fear. Jasmin described she had "never been in such an incident erm especially at work erm so it was pretty scary" (Jasmin, line 6-7). Isobel added "there was a lot that had happened on that day and things I'd never come across before so all of it together was just alot (Isobel, line 6-7).

Jasmin added the magnitude of traumatic incident was widely known in the hospital where she worked. Jasmin described colleagues approaching her about the incident, which created conflict between her ability to share information, due to confidentiality, with their constant questions. Jasmin described fear of the reprisals if she did share such information:

> "I had people coming from like different parts of the hospital that knew about the incident and they just wanted to know like what happened what happened 'cause it was such a major incident…I had like senior nurses saying to me you can't speak to them about the incident because it's confidential but then it's like healthcare assistants coming up to me oh my god Jasmin…you've been involved with this you've been involved with that and then I was like I don't' wanna get myself into trouble by giving sharing information and you guys already know anyway…it was a very difficult decision like they kept coming up to the ward I was working on and asking me questions" (Jasmin, line 49-57).

For Sophie, the constant repetition of the initial traumatic incident caused her a lot of distress:

"I was ok but then we had lots of people doing what she did and I think it was that…secondary trauma too it's not just the you're experiencing trauma it's the fact that you've had this actually really horrible thing happen and then people are literally then putting you back in that situation" (Sophie, line 69-73).

Subtheme One: Keep Calm and Carry On

The first subtheme pertains to the participants' tendency to carry on with the practical aspects of their work immediately after the traumatic incident. Participants also discussed not talking to others about the incident or it's impacts. Reasons for not talking to others seemed to orientate around not wanting to disclose distress, wishing to avoid upsetting others, and fearing others' reactions.

Within the participants' narratives, carrying on with work seemed to arise from an expectation from the service and to role-model to others. Sophie described the expectation to carry on with work after the traumatic incident, as exposure to trauma was an expected part of her job: "It can be very much well it's your job you've picked to work in…you've worked here for a long time you know what you're getting yourself in for you're just expected to carry on" (Sophie, line 680-683).

Jade highlighted this point of carrying on at work, which was amplified by her role as a senior clinician. Jade described how carrying on with work reflected a resilience to the trauma:

"In the service I work in a bit of an ethos of bad things happen all the time and we do…have to have a degree of resilience and get on with it erm and if you're a senior

manager its almost more of the case if that makes sense and you're modelling to your team about it" (Jade, line 361-364).

Isobel agreed that she felt responsible to role-model to others as a longer-serving colleague. Isobel described she role-modelled a pretence of coping to protect her colleagues:

"I think in…my office I guess I've been in post the longest so kind of have a bit more of a role model type element to my role if you like erm so I felt I dunno it was a bit I look back on it now and I think I just silly like I wasn't ok and I didn't need to pretend to be ok but I felt like for everybody's sake I needed to be" (Isobel, line 132-134).

Despite the trauma participants experienced, this tendency to carry on with work appeared to restrict conversations with colleagues about the incident and it's impacts. Ella spoke about this dearth and avoidance of conversation around the incident: "We as colleagues were not talking to each other about it we were all avoiding the subject" (Ella, line 186).

Avoiding talking about the trauma appeared to be due to participants' difficulty in disclosing their own distress. Isobel discussed the difficulty in voicing the trauma she experienced. Her use of the words "exposing" and "weakness" elude to an expectation to carry on at work and not show signs of trauma. Similar to Jade, there appeared to be a facade of resilience by hiding distress: "It felt a bit of a weakness to say and a bit exposing to say actually I'm not ok with this I'm not ok with what's happened I'm struggling" (Isobel, line 64-66). Isobel described avoiding even looking at her colleagues during the Traumatic Incident Briefing for fear of exposing her distress:

"I was just avoiding look at anybody erm a couple of my colleagues were quite upset and I was like I'm just not gonna look at anyone cause if I look someone or acknowledge it I'm

either gonna get really upset or I'm gonna get really distressed and I didn't want that to happen" (Isobel, line 107-110).

This lack of talking to colleagues was also described as a way to avoid distressing others. Jade discussed how she didn't talk to others about her experiences for fear of traumatising them: "Often you don't wanna share things 'cause you think you might traumatise somebody else" (Jade, line 186). Ella agreed that she wasn't able to talk about her experiences with others for fear of their reaction: "Who you kind of had to er walk on egg shells around because you weren't sure how they were going to react" (Ella, line 188-189).

Jade and Ella's descriptions appear to conjure a sense that they held in their experiences of a traumatic event and feared others' reaction if they were to initiate a conversation about the trauma. Ella added that this intention of not wanting to distress others by talking about the incident was underpinned by their profession being one of care for others: "We're all very caring people who work in services like this and we our first port of call might be to check in with others and not check in with ourselves" (Ella, line 298).

Within participants' narratives, a dearth of conversation with others about the incident and it's impacts created a sense of isolation. Isobel illustrated this point where she described an inability to share her experiences after the incident, leaving her feeling isolated:

"I guess not knowing that other people are experiencing the same thing it wasn't like you know we go through and say oh you should be experiencing this tell us about it it's you might be experiencing this but you don't know for definite that you're not on your own in that and…I think that probably contributed to feeling quite isolated" (Isobel, line 228-231).

Participants' narratives, therefore, told of a tendency to carry on with work after the traumatic incident without talking to others so to not disclose their distress or distress others.

This subtheme integrates with the subtheme of 'the therapeutic alliance with the practitioner', as participants' withholding disclosing their distress may have impeded their honesty with their TRiM practitioner.

Subtheme Two: Changes in Internal Processes

The second subtheme described the internal changes participants' described experiencing after the traumatic incident. Participants discussed cognitive and emotional change in the proceeding weeks after the traumatic incident. Emotional change, participants described, was one of numbness and derealisation of the incident. Isobel described such experiences:

> "I just remember feeling really numb for the first week after the incident so I think yea definitely on that Monday…I was really anxious in the morning and then just kind of felt really numb for most of the day erm very much knew it had happened but it didn't feel real it's the only way I can describe it" (Isobel, line 138-141).

Participants also described a cognitive change after the incident. This cognitive change seemed to include mentally escaping, particularly when confronted with the facts of the incident. Ella described experiencing a form of mental escape while she attended the Trauma Incident Briefing, which talked through the incident: "I almost felt a little erm removed from it even though I was in the room my head was elsewhere" (Ella, line 133-134). Isobel agreed that she experienced a form of mental escape in the Trauma Incident Briefing, as she was not ready to hear about the incident:

> "I think I was worried about hearing having experienced the incident what it was gonna be like hearing about it again erm and I think for quite a bit of it I was in the room but I wasn't really mentally in the room I was zoned out" (Isobel, line 102-105).

Other cognitive changes described were preoccupation about the incident and difficulty concentrating in other aspects of their lives. Jasmin discussed her preoccupation with the fear of blame about her role in the incident, altering her ability to concentrate in other areas of her life. Using terms such as 'in big trouble' highlights the extent of her fear in the aftermath of the trauma and she also conveyed her preoccupation with this thought: "I'm in big trouble now…so that was going through my head for a couple of weeks and I just couldn't think like mentally at work or at home" (Jasmin, 29-31).

Ben also described preoccupation with the incident and the potential consequences in the proceeding weeks. Similar to Jasmin, Ben's concern of the service user's stay in intensive care and uncertainty of neurological consequences signifies the fear he seemed to experience in the aftermath of the trauma:

> 'I thought about it an awful lot…erm so so…I guess…over a couple of weeks er and particularly the first weeks the patient was in intensive care for a week and I guess what I didn't know is…what the outcome was going to be from a kind of neurolo[logical] so I guess for a week I was pretty worried erm and so…there was a period of time where I guess you had a degree of preoccupation with it' (Ben, line 150-156).

Overall, participants described internal changes after the traumatic incident, encompassing cognitive and emotional changes while carrying on with their work.

Subtheme Three: Shame and Guilt

This third subtheme pertained to the shame and guilt participants reported experiencing after the traumatic incident. Participants described that despite carrying on with their work and holding their experiences to themselves, they experienced significant shame and guilt. Jade described that her decision-making led to a person's exposure to the incident, prompting her guilt: "I felt guilty because one member of staff was particularly upset was very upset because the way she'd been exposed to the incident was entirely as a result of the decision making I made in that incident" (Jade, line 81-82). Jade adds that these feelings of guilt then prompted her to support others:

> "I felt concerned about those staff I felt responsible for those staff I felt a bit guilty about it erm kind of a whole plethora of emotions really and I also felt probably quite eager to support and help those staff" (Jade, line 73-75).

Isobel also described experiencing guilt as a result of people becoming involved in the incident and how this prompted her response to support them: "I kind of felt really guilty that they'd had to go through that" (Isobel, line 124); "I did feel a little responsible and wanted to make sure that they were ok" (Isobel, line 126).

Sophie, on the other hand, discussed her guilt stemmed from the belief that the response to the incident wasn't good enough as they were unable to keep the person alive: "We tried everything and we intervened really quickly but it just wasn't good enough" (Sophie, line 140-142).

Alongside guilt, participants described feeling shame, particularly around blame for their role in the incident. Similar to the first subtheme, shame appeared to lead to participants

not talking about the incident with others, but for fear of blame or criticism. Jasmin spoke about concern she would be blamed for her role in the incident when she was informed of the coroner's court review. This concern of blame seemed to leave her ruminating and unable concentrate. This concern of blame appeared to create shame leading to her hiding her experiences from others:

> "Once I heard the coroners bit that it was gonna go to coroners court I just thought oh my god we're all in trouble and I'm in trouble because obviously I commenced CPR as well so I thought 'cause I took part of the role like I'm in big trouble now…so that was going through my head for a couple of weeks and I just couldn't think like mentally at work or at home and I felt really really down and I just couldn't speak to anybody about it thinking you know I'm in a lot of trouble" (Jasmin, line 27-32).

Jasmin discussed that shame and fear also involved the potential consequences to her career: "I thought what if [employer] find out erm that I've been involved what if they kick me out so it wasn't I wasn't more scared about the incident I was scared about the impact its gonna cause overall" (Jasmin, line 270-3). Isobel also described this ongoing concern of blame and criticism about her role in the incident:

> "I'd had these like ongoing thought of like maybe we'd done something wrong we hadn't done the right thing even though the outcome was ultimately good we didn't know that at the time it was gonna be a positive outcome we didn't know conclusively so I think there's very much still an anxiety around we don't know what the outcome of this is going to be..erm this almost fear of criticism even though I know that's not what's supposed to happen in a TIB you never really know what other people are gonna say" (Isobel, line 96-101).

After going through TRiM some participants described lessoning of the shame and guilt they felt, as their perspective of the incident and their respective role changed. These emotions of guilt and shame seemed to lesson for some participants as they made sense of what had happened in the incident. As such, this subtheme relates to the subtheme of 'making sense of what happened' in the second superordinate theme 'revisiting the trauma'. Jade discussed how her talking about the incident afforded her a different perspective that separated the guilt from her experience:

> "When you say it out loud you then have a different perspective on it 'cause it's in…kind of logical order and you think and you look back and you have a bit of objectivity about and think well actually you know…it's kind of separates it from the emotion a little it and helps you be a bit more objective about it" (Jade, line 272-275).

Jade elaborated a different perspective also allowed her to recover from the guilt:

> "I think I came to the conclusion that I did the best thing at the time and therefore you don't need to feel guilty about it so it was helpful it probably helped me move past that feeling of guilt quite quickly" (Jade, line 255-257).

Jade reported that the TRiM assessment session helped her to lessen the guilt she felt:

> "Guilt was there and it continued a bit but then I guess I think the TRiM assessment was very helpful in thinking about…that as well and about processing that and starting to feel a little bit better and a bit lighter in terms of that" (Jade, 264-266).

Isobel described that with time and sense-making of her experiences her emotions were more in control, signifying progress in her recovery from the trauma:

> "It felt like a step forward I guess kind of this thing has happened and I've had all these emotions around it but not being able to talk about it is like it's the next step erm and it gave me back a little of that control I guess, of being able to talk about and be able to control my emotions gave me back a bit of that control" (Isobel, 350-354).

Jasmin also reported reductions in her shame after receiving assurance and praise from her TRiM practitioner about her role in the incident. This reassurance that she would not be blamed seemed to lead to her being able to share her experiences that she previously kept to herself:

> "She said to me look the only person that'll be attending court is erm the doctor erm that's…who was looking after the patient so the consultants gonna be going and erm what you guys did was an amazing job and with the support I got from her erm from the first session erm I felt really like…er a cloud just went off my head completely erm and then I just opened up and I said to her look this is how I felt" (Jasmin, line 33-37).

Jasmin elaborated that her relief at not being blamed enabled her to return to normality: "I felt good in myself thinking ok I'm not going to get into trouble just carry on with normal life" (Jasmin, line 203-204).

From their narratives, participants discussed guilt and shame related to the incident and the potential reprisals, e.g., attending coroner's court, and about other people who were involved in the incident. This shame and guilt appeared to lesson as participants' created new perspectives.

Subtheme Four: Acknowledged and Appreciated

This subtheme relates to the acknowledgment and appreciation participants experienced from and to others after the trauma. Despite the aftermath of the trauma, participants described elements of being acknowledged and praised. Initially, however, Jasmin described receiving no acknowledgement from management after the traumatic incident:

> "Not one of the managers came down to me and said well-done Jasmin you know the band 7s and the matrons you know the clinical managers not one of them came down to me and said to me that you know we appreciate the work that you got involved in…erm and well done and thank you for this and that nothing at all" (Jasmin, line 432-435).

Jasmin discussed her affront at the lack of acknowledgement from the service, and how this influenced her to withdraw from work:

> "I thought hang on these guys are not saying even a thank you to me I just kept cancelling my shifts and obviously all of that going through my head nobody's supporting me erm and they knew exactly where I was working as well erm and I thought ok you know if that's how you guys feel then you know" (Jasmin, 447-450).

Jasmin described receiving this acknowledgement and appreciation from the TRiM practitioner, however, which she particularly valued: "I felt like gold dust like oh my god you know higher management's given me a bit of time" (Jasmin, line 340). Jasmin elaborated that this acknowledgement and appreciation left her feeling important and supported at work: "You feel cared for and valued so they appreciate the things that you actually got involved in

and having the praise is ‘cause praise isn’t really for the slightest thing it means a lot” (Jasmin, line 430-431).

Sophie also experienced recognition: “It is quite good to hear that other people recognise stuff as well that I don’t think necessarily sometimes that’s shared” (Sophie, line 163-165). Sophie added that she found new appreciation for other people that were involved in the incident:

> “I think it was giving them some confidence that actually we’re really grateful that you reacted so quickly and even if you didn’t necessarily do the same thing that a nurse did you still dealt with the incident and I think it was giving them confidence as well that they’re appreciated” (Sophie, line 234-238).

Sophie elaborated that this acknowledgement of who was involved in the incident helped build relationships and support between people:

> “You think that people didn’t respond or people might have froze and you get frustrated but then to hear well they did freeze but then they did this erm so I think it is useful in helping to build the relationships and knowing what support you’ve got not just in terms of the TRiM and TIB but actually on site knowing who’s responding and having confidence that you’re going to be supported” (Sophie, line 329-335).

Participants, therefore, appeared to value acknowledgement and appreciation of their role in the incident.

Subtheme Five: Growth After the Trauma

This final subtheme reflects the participants' narratives around growing from the trauma. This growth related to learning about oneself and others, and a developed confidence and resilience. Such growth appeared to develop after time and space to reflect. Ella described a development of learning about herself and service users after the traumatic incident: "I've had you know space to think about myself and what I want and I've learnt so much about myself and service users" (Ella, line 517-8). Jade agreed that experiencing the trauma and going through TRiM offered a positive learning opportunity: "It was a wonderful learning experience" (Jade, line 130). Jade elaborated that the lived experience of the trauma and TRiM gave her a new understanding: "I found it very interesting having a personal experience of it and obviously having a different…kind of insight into it" (Jade, line 132-133).

Sophie discussed a new found confidence in her working role:

> "It's taken me a long time…to say well I am good at my job and I know that I keep people safe and I know that I can justify decisions that I make and they may not always be the right decisions but I do it for the right reasons kind of thing so erm I did find that helpful erm so it helped build my confidence in my ability to be a [occupation] maybe not directly but indirectly" (Sophie, line 709-714).

Additionally, Jasmin described her increased confidence and resilience that she attributed to the incident: "Now looking back on it now it's just made me mentally more stronger you know I believe in myself more and I'm actually glad I took part in it" (Jasmin, line 292-294); "It's made me more confident its boosted my self-esteem greatly and er it's made me into a stronger minded person" (Jasmin, line 465-466).

Hence, some participants reported a growth after the traumatic incident that seemed to orientate around their learning, confidence and resilience.

Superordinate Theme Two: Revisiting the Trauma

The second superordinate theme relates to participants' experiences of revisiting the trauma and incorporates three subthemes, starting with 'the therapeutic alliance with the practitioner', moving onto 'making sense of what happened' and 'normalising trauma reactions'. The initial aftermath of the trauma was one of experiencing significant trauma reactions while continuing work. Participants described they since re-visited the trauma within TRiM, which was somewhat retraumatising, as Isobel described: "It [talking through incident] was a little bit retraumatising" (Isobel, line 324). Isobel elaborated that allowing herself to remember the trauma prompted trauma reactions: "Although I felt better afterwards I remember that night I again I slept really badly erm and I think just 'cause I talked about it and I'd let myself remember it that had had an impact later on" (Isobel, line 341-342).

Ella added that re-visiting the traumatic incident evoked a sense of re-experiencing the trauma:

> "When I went to the first TRiM session I really went into full detail you know with thoughts feelings and behaviours at each step [of the incident] and at each section so that was definitely the hardest cause it almost felt I was back there again really taking this erm..entire incident into detail" (Ella, 348-350).

Jasmin described the emotional impact of talking through the incident:

> "It [talking about incident] was…more anxiety…nervous at the start and quite upset but erm once I'd started talking about it and I felt that she was listening erm I wasn't feeling as

nervous erm and it was like I wasn't feeling more that upset as well but I was trying to control myself but quite tearful as well" (Jasmin, 242-245).

In contrast, Ben discussed that his distance from the incident, as he did not witness the incident but worked with the service user, enabled him to revisit the trauma with little impact: "I felt…a bit removed from the incident if that makes sense erm because…I wasn't there I didn't witness it erm so it felt…really you know sort of talking about' (Ben, line 116-119). Ben also described that his knowledge of the service user surviving enabled him to talk about the incident in a reflective capacity:

"It felt like you know I was being much more reflective of a situation er rather than being…in the midst of a traumatic you know yeah…I felt I was more reflective of something nearly went wrong rather than erm being in the midst of you know something that really had gone wrong and I was still you know going through the consequences of…that" (Ben, line 332-337).

Subtheme One: The Therapeutic Alliance with the Practitioner

The first subtheme within the theme of 'revisiting the trauma' relates to the therapeutic alliance formed with the participants and TRiM practitioners. TRiM was delivered by colleagues within the service. As such, participants knew their TRiM practitioner either directly, for instance they had previously worked with them, or indirectly, i.e., they knew of their practitioner within the service.

Participants described the difficulty in revisiting the trauma was eased by an engaging practitioner. Participants who knew their practitioner directly described comfort in this familiarity, which automatically enhanced participants ability to talk openly about their

experiences. However, some participants described an inability to disclose the extent of their distress to someone they knew.

Firstly, participants described the interpersonal skills of the practitioner developed a therapeutic alliance that enabled them to discuss their experiences. Jasmin described how the practitioner's non-verbal communication was important for her:

> "She was giving me eye contact so effective communication and she wasn't just sitting there like writing things down she was looking at me in the eye and she was listening to what I was saying even though we had masks on I could tell that she was interested in what I was saying to her" (Jasmin, line 221-224).

When asked what it was like to talk through the incident with someone listening to her, Jasmin described it facilitated her honesty:

> "I just felt more open so I wasn't closing any information to myself I was just being up front and honest erm and I just kept telling her everything because I knew that you know erm she's listening to me and I just wanted someone to listen to me" (Jasmin, line 226-228).

Isobel agreed about the interest the practitioner showed and how this facilitated her engagement with them:

> "I think…they were genuinely interested in how I was feeling it wasn't just a sort of…tick box exercise it was a genuine interest in how are you feeling what's happened you know erm and that made it a lot easier to talk to talk to them" (Isobel, line 374-378).

Ben also agreed with the ease of talking with his practitioner: “I kind of found them very…easy to talk to you know I felt very comfortable erm you know speaking about what happened” (Ben, line 196-197).

Participants who knew their practitioner from working with them previously described comfort in knowing them, as Ella described: “I was comforted that she was somebody I already knew” (Ella, line 371). Jade discussed that knowing the practitioner meant she knew she would be able to talk to them without upsetting them, a belief about other’s reactions that inhibited her talking to her colleagues:

> “I also know the TRiM practitioner fairly well so I’m very comfortable with her so that made it easier just feeling safe really to be honest you know it felt like a safe space it felt like it was confidential to say what I thought and also…it was somebody who was completely not involved in it so I didn’t have to worry about upsetting them I was fairly confident that that person was going to be robust enough to take what I was gonna tell them” (Jade, line 293-298).

Sophie also described how honest she could be with a practitioner she knew, which created a sense that trust was already established.

> “I’d normally speak to someone the person who referred me to this because she knew kind of everything that was going on outside of work as well as inside of work so I’d normally go in because I had worked with her for a long time so I had quite a good relationship with her and I feel quite free to discuss them issues” (Sophie, line 53-58).

Sophie elaborated on how the practitioner understood her and what her inner experiences were likely to be:

> "One of the reasons I wanted to talk to her was that she was very aware of my mindset and how I do think about certain things cause I put a lot of pressure on myself so she's kind of aware of all that so that's why I wanted to talk to her instead of somebody else cause I know she was aware of where I was coming from and she understood more like how I would feel about a situation" (Sophie, line 456-460).

Sophie added that seeing the same practitioner meant she did not have to explain and re-live any difficult experiences: "It was looking at kind of the continuation of everything which was more helpful than having to start completely afresh and having to explain everything and kind of relive all that stuff as well" (Sophie, 186-188).

This established relationship with the practitioner seemed to result in an influential partnership that may not have existed with an unfamiliar practitioner. Participants were honest about their experiences and the practitioners were honest when identifying participants' distress. Jade described how the practitioner challenged her perception that she was not experiencing much stress, with such challenges not usually occurring due to her senior position:

> "When you're fairly fairly senior clinician and you kind of manage the whole team nobody points things out to you because people don't challenge you because you're at that point so it's quite helpful to have somebody challenge you there are very few people that challenge me in my job at the moment in terms of that so it was really good she could do that" (Jade, line 335-9).

Sophie re-iterates this point, where she described her practitioner identifying her distress and her need to take time away from work despite this being a dilemma for Sophie:

> "I know that they felt they were quite conflicted 'cause they were like look I know what work means to you I know all of this stuff but like you're really not ok erm so it was…what I needed to hear 'cause they knew me whereas if I went to someone I didn't know I don't think I would have been so receptive to it" (Sophie, line 548-550).

However, the other side of a familiar practitioner was one of restricted honesty in their distress. Some participants described the hesitancy in admitting serious distress or coping in ways that could be negatively perceived. Ella discussed how she wasn't completely honest with her practitioner as she wanted to project an air of coping: "I don't think I was entirely honest with her with how much I had been struggling because I wanted to tell her that everything was ok with me" (Ella, 373-375). Jade added she could not have disclosed serious distress if she was experiencing this at the time of talking with her practitioner:

> "I wonder whether I would have found it more difficult if I was really struggling er I think that you know me going into and saying I'm absolutely fine probably a reflection of that 'cause…this persons my peer erm not that I am someone that wouldn't admit you were struggling but you know if you're talking to somebody that you do know that is your peer you don't wanna necessarily go in and go oh I'm a broken person I'm in pieces" (Jade, line 326-330).

Lastly, Ben described that if he were using coping strategies that could be negatively perceived by the practitioner, this could have restricted his honesty:

> "If I was coping with some maladaptive ways of managing you know following an incident so quite whether I would have felt comfortable being open about that you know to to essentially someone who's a colleague you not…directly a colleague but…I think that's a

potential you know so as an example if I was using alcohol as a way of managing…my emotional reaction to an incident erm I don't know…how easy it would be to be open about that" (Ben, line 224-233).

A hesitancy to engage in complete honesty with a known practitioner integrates somewhat with the subtheme of 'keep calm and carry on' where participants put across a pretence of coping for the sake of their colleagues or the disclosure of their own distress felt too exposing. Additionally, the subtheme of 'shame and guilt' may also add another facet. The participants hesitancy in admitting distress to their practitioner may stem from the shame and guilt associated with the event and their inner experiences leaving them to hide their true experiences from others.

Subtheme Two: Making Sense of What Happened

Despite the difficulty in revisiting the trauma, participants described talking through the incident and it's impacts on them. Talking about the incident and it's impacts appeared to provide relief and help participants make sense of their experiences. Within some participants' narratives, the nature of having individual discussions with the practitioner facilitated openness when discussing their experiences, whereas group discussions would have impeded such openness. Related to the subtheme 'shame and guilt' in the first superordinate theme, making sense of what happened appeared to enable change in participants' shame and guilt.

Jasmin described the initial relief of talking about what happened and letting out her emotions. Her use of the metaphor of a cloud leaving her head evokes a sense of the heaviness she experienced keeping her experiences to herself:

"I felt really like…er a cloud just went off my head completely erm and then I just opened up and I said to her look this is how I felt and she after spending about an hour and a half with her I felt a lot better" (Jasmin, line 35-8).

Jasmin elaborated that the reassurance from the TRiM practitioner allowed her to share experiences she had previously kept to herself:

"Just letting all your feelings and emotions out erm and then just that reassurance of someone saying to you…yea its fine its fine you know carry on like tell me more erm and just letting it all out erm I wasn't holding anything into myself at all so I just felt like a big relief just coming out of me once I spoke to her" (Jasmin, line 256-260).

Ella described thinking about the trauma and it's impacts helped organise the experience: "I gave myself a little bit of time at home to just sort of think about it and keep it sort of tidy" (Ella, line 359-360). Isobel discussed how talking about the incident helped change the confusion she experienced in remembering the incident to a more chronological and narrated state:

"It was helpful to…what it gave me was space to kind of piece together what had happened 'cause I think up until that point I hadn't really been able to sort of put a timeline on it and say you know we did this first and then we did this I wasn't really able to do that that was quite difficult erm but it started to give me a bit of a narrative around…the incident which I hadn't really I could have talked about different bit of different times but it was all jumbled up in my head and I think it really helped me kind of piece it together" (Isobel, line 308-313).

Isobel elaborated about remembering forgotten aspects of the incident, which enhanced her sense making of the incident:

> "There were bits where I'd suddenly I'd remember…things and being like oh I'd forgotten that had happened or I'd forgotten that this person was there of this person did that and I think at that point it had all sort of started coming together in my head and I started to recall things that I hadn't recalled before" (Isobel, line 327-330).

Jade added that this sense-making of a cognitive nature facilitated her recovery from the trauma: "It also helped to attach some kind of cognition sense making to it really to help you kind of move past and process it" (Jade, line 245-256).

Participants discussed that in addition to making sense of what had happened in the traumatic incident, they were also able to reflect on their own experiences and distress. Jade discussed that identifying areas of difficulty deepened self-understanding.

> "It made me stop and reflect a bit and think about where I might be a bit more wobbly erm and so I came out of it thinking well actually you know I guess I had a bit more depth of thought and understanding around how I was doing at that moment and what's going on" (Jade, line 349-352).

Sophie re-iterated the point of identifying areas of difficulty that she was not previously aware of: "So we went through like erm how I was feeling how it had affected stuff that maybe I wasn't aware of" (Sophie, line 394-395). Ben elaborated that this reflection on his experiences was calming for him: "It was helpful to reflect on things a little bit…I guess emotional reaction to…something was…sort of settling" (Ben, line 139-142).

Lastly, participants described how this sense-making of the incident and their experiences was improved by the individual nature of the session with the practitioner. Participants believed that a group setting would have impeded the depth of exploration and understanding. Sophie described that her consideration of others stopped her discussing aspects of the incident that she felt able to discuss in her individual session:

> "You don't wanna say certain things like that in a TIB where other people are trying to deal and process that incident so it's about having that one to one in a TRiM and actually look at how it is affecting you" (Sophie, line 143-146).

Similarly, Isobel reflected on her previous experience of group debriefs where she wasn't able to openly share her experiences:

> "Previously I've done group debriefs and things where we have all talked together but…I've always felt a tendency to hold back and not share everything because there's like six or seven other people sitting there but actually this way…I do get the space to be really honest about what's going on and I think that for me like personally that's more helpful erm cause I didn't really worry about sharing too much or saying too much I didn't feel the need to worry or overthink" (Isobel, line 495-501).

Overall, participants discussed how re-visiting the trauma helped them remember forgotten aspects, organise the trauma in their memory, and cognitively make sense of the event, which seemed to help them process and move past the trauma.

Subtheme Three: Normalising Trauma Reactions

The third subtheme within 'revisiting the trauma' described the participants' experience of normalisation of their trauma reactions. This normalisation of participants' reactions to the trauma appeared to reassure them. Ben described such reassurances he received: "Felt like a bit of normalization of this was a stressful event and you know usually these things settle down and…you know explain what a normal response is to an incident like that" (Ben, line 105-108).

Jasmin described her initial fear of her trauma reactions which abated once the reactions were assured as normal:

> "It was scary at first obviously 'cause I was keeping it all to myself then when Lucy said to me like it's normal erm to experience that I felt better thinking ok erm 'cause I just thought you know I'm getting depressed over this I'm feeling all this anxiety and all this frustrating problems but once she said that its normal absolutely fine for you to feel like this I felt a lot better erm 'cause I thought ok it is normal" (Jasmin, line 169-172).

Jade discussed how despite mental health practitioners already holding knowledge of mental health she stressed the importance of reminders of this knowledge as they navigated the lived experience of trauma:

> "I think it's useful to hear it cause it just…kind of normalises and validates what's been going on because…you can know everything about mental health and work with mental health and teach people how to understand their mental health but that's a very different experience…to when you are the subject of that and you're having your own experiences of it and its very difficult to be objective when you're having your own experience around

it and I think what it does is it helps to have a bit of grounding and objectivity about it doesn't it in terms of just saying this is how you might feel when something like this has happened and it's really normal" (Jade, line 179-186).

Within participants narratives, therefore, normalised trauma reactions provided relief and improved their distress.

Discussion

The current research aimed to develop better understanding into mental health practitioners' experience of TRiM. TRiM consists of a peer-delivered intervention designed to assess and triage, rather than intervene as a trauma therapy. However, the current findings show elements of process occurring in trauma therapy within TRiM .

Connections to Previous Theory and Research

Theme of Aftermath of the Trauma

Participants described the aftermath of the trauma as one of recounting the magnitude of the traumatic event. Participants described carrying on with their work without talking to colleagues about the trauma for fear of exposing their distress, or to avoid distressing others. Despite carrying on with work, participants reported experiencing trauma reactions, including emotional and cognitive changes, e.g., numbness, preoccupation with the trauma, and derealisation. Participants also reported shame and guilt related to the trauma, which appeared to lessen through sense-making and creating new perspectives of the trauma. Participants described valuing the acknowledgment and appreciation for their involvement in the event. With time and through sense-making, some participants were able to grow from the trauma.

Previous research corroborated with the theme, 'aftermath of the trauma'. Acute stress reactions were evident with participants avoiding talking with others about the trauma,

experiencing guilt and shame and internal changes, such as derealisation and concentration difficulties, (Bryant, 2016; Norman, Allard, Browne, Capone, Davis & Kubany, 2019). The significant trauma reactions observed within the current study have not been previously highlighted in research exploring early post-trauma interventions, however, apart from people experiencing heightened emotions, including shame and guilt (Firing et al. 2015; Robinson & Mitchell, 1993). The current findings that practitioners describe experiencing trauma reactions following serious incidents in mental health care settings concurred with previous literature showing prevalence rates of trauma reactions within healthcare as high as 96% (Schuster & Dwyer, 2020).

The organisational implication of participants experience of significant trauma reactions brings attention to professional regulatory guidelines. These guidelines direct practitioners to manage their health, whereby practitioners must change, or stop, their practice if their physical or mental health may affect their performance or judgement (Health and Care Professions Council, 2018; Nursing and Midwifery Council, 2015). Therefore, the significant trauma reactions participants described experiencing, particularly derealisation, numbness, and lack of concentration, could seriously impact on mental health practitioners' fitness to practice. This finding also highlights the importance of organisational awareness and proactive inquiry into practitioners' fitness to practice after a traumatic incident at work.

The current research also showed a participant describe constant approaches from colleagues enquiring about the traumatic event. This reaction from others brings attention to trauma-informed care literature. This literature recommends the need for emotional safety within interactions, with peer support imperative in the prevention of isolation and depression after experiencing trauma (Substance Abuse and Mental Health Services Administration, 2014). Also, the retelling of a traumatic event can be in itself re-traumatising (Butler, Critelli

& Rinfrette, 2011). Within the participant's experiences, perhaps the repeated asking of the event compromised the emotional safety in peer interactions, with potential re-traumatisation. Clinical implications from this finding, include the use of trauma-informed care literature in changing the wider social support of colleagues following incidents.

Subthemes Keep Calm and Carry on, and Shame and Guilt. The subthemes within the 'aftermath of the trauma' theme also integrate with previous research and psychological theory. Firstly, the current findings suggested participants hid their distress from others and carried on with their work. Participants also experienced much shame and guilt about their own and others' role in the trauma, with fears of blame and criticism. Congruent to this finding, previous research suggested that employees' exposed to trauma believed that admitting distress could result in negative appraisals from their colleagues, such as a lack of competency and coping ability, and detrimentally impact their career (Greenberg, et al 2007; Knaak, et al. 2017; Watson & Andrews, 2017). Another reason participants' reported hiding their distress was for fear of traumatising others, a facet possibly unique to the current research considering mental healthcare practitioners caring role. Nonetheless, carrying on with work while hiding distress highlighted misunderstanding of trauma reactions and resilience. Indeed, after a trauma, communication and social support play key roles in enhancing resilience as opposed to hiding distress (Hansford & Jobson, 2021; Meredith et al., 2011). Participants did access support with TRiM, however, their narratives told of concealing their distress from colleagues. This concealment possibly entrenched the propensity of practitioners carrying on with work within the service despite internal distress, which could detrimentally impact their mental wellbeing. This finding implies the need for wider communication and social support when employees experience a trauma a work.

Secondly, changes within participants' shame and guilt echo previous research exploring early post-trauma interventions and psychological theory. Participants' narratives described that making sense of the trauma afforded new perspectives on the traumatic incident and their respective roles. Participants discussed that these new perspectives reduced guilt and shame, which helped further sharing of their experiences and provided a sense of closure from the trauma. Previous research supports this connection between making sense of the trauma enabling new perspectives and lessoning guilt and shame (Cahill, Rothbaum, Resick & Follette, 2009; Enosh & Buchbinder, 2005; Firing & Johansen, 2015; Robinson & Mitchell, 1993).

Psychological theory of emotion and cognitive processing also underpin this finding. Theory postulates that emotion and cognitive change occurs though cognitive reflection on emotions that can engender self-compassion and positive self-appraisals, leading to closure and resolution of the event (Pascual-Leone, 2018). This finding of lessoning of guilt and shame through making sense of the trauma appears particularly important when considering the continuation of guilt and shame can contribute towards someone experiencing PTSD (Cunningham, et al. 2018).

Subtheme Growth After the Trauma. Thirdly, previous research supported the current findings of growth after trauma. Research suggested post-trauma growth occurs with time and understanding of the trauma (Asgari & Naghavi, 2019). Consistent with previous research, participants shared that their growth from the trauma orientated around learning about themselves and others, and increased confidence in their work and resilience (Glad, Jeson, Holt & Ormhaug, 2013; Kampman, Hefferon, Wilson & Beale, 2015). This finding of growth after trauma within the current research adds to early post-trauma interventions

research, which has not previously highlighted this element of people's experiences of these interventions.

Subtheme Acknowledgement and Appreciation. Lastly, participants experiencing acknowledgement and appreciation after the trauma brings attention to organisational support research. During the TRiM process, participants described feeling cared for and valued when they were acknowledged and praised for their involvement in the traumatic event. This finding is consistent with previous research that highlights the importance of organisational support in lowering distress and increasing wellbeing at work after a trauma, and improving staff retention (Aldamman et al. 2019; Cakal, Keshavarzi, Ruhani & Dakhil-Abbasi, 2021). Despite this subtheme containing only two participants, the theme was retained due to the clear link with organisational literature. Understanding the importance of participants' experiences of acknowledgement and appreciation highlights the need for a wider organisational support in response to employees involved in traumatic events at work.

Theme Revisiting the Trauma

Participants described the difficulty in re-visiting the trauma. However, within participants' narratives, re-visiting the trauma offered an opportunity to make sense of the trauma and it's impacts. The interpersonal skills and familiarity of the practitioner aided participants ability to talk about the trauma. However, sometimes the familiarity with the practitioner hindered honestly in disclosing distress.

Subtheme The Therapeutic Alliance with the Practitioner. The peer-support system, a unique feature of TRiM, seemed to enhance participants' ability to talk about the trauma and it's impacts. This finding is similar to previous research where attendees of TRiM reported on the usefulness of a peer-delivered system (Greenberg et al., 2011). The current

findings extend this research through understanding that familiar TRiM practitioners created comfort and a perception of already being understood. A pre-established relationship with the practitioner also effected honesty and influence, where participants were open about their experiences regarding the trauma and practitioners could identify areas of stress/distress for participants. However, a familiar practitioner also restricted full honesty, where participants could not disclose the extent of their distress. Perhaps participants were unable to disclose their distress due to the tendency to hide their distress for fear of exposure or upsetting others, or due to their shame and guilt prompted by the trauma.

These findings highlight clinical implications relating to TRiM as a peer-delivered intervention. For instance, participants felt more able to share their experiences with a familiar practitioners, which could enhance the risk assessment within TRiM. However, some participants' restriction in sharing their distress could hinder an accurate risk assessment for someone developing mental health issues after the trauma.

Subtheme Making Sense of What Happened. Another aspect of re-visiting the trauma consistent with previous research includes participants making sense of the trauma and it's impacts. Previous research within early post-trauma interventions demonstrated sharing their experiences helped people accept the incident (Robinson & Mitchell, 1993). Within group settings, hearing others' experiences helped people make sense of their own experiences and relate to the event differently (Firing et al. 2015). The current findings agreed that participants' described making sense of the trauma by talking through the traumatic event and their experiences. Talking through the trauma seemed to help participants move from a confused memory of the incident to a chronological, narrated memory. The findings also showed that talking through the trauma helped participants attach alternative cognition to the

emotion and enhance understanding of their own experiences. Psychological theory lends some understanding to this process. Particularly, the idea that re-visiting the disorganised trauma memory helps organise and process this memory (Ehlers & Clarke, 2000). As well as exploring the trauma memory helping construct meaning and challenge problematic cognitions (Cahill et al. 2009; Enosh & Buchbinder, 2005).

The findings of re-visiting and making sense of the trauma within an individual session extends previous research focusing on group settings (Firing et al. 2015). The current findings suggested that the individual nature of the session increased participants' sharing without the need to consider others. Perhaps the individual nature of TRiM removes the tendency for people to hide distress, or to prioritise others in the mental health practitioners caring role.

Despite TRiM not being designed as a trauma therapy, participants' sense-making of the trauma echo elements of such therapies. For instance, making sense of the traumatic event parallels with trauma therapies that re-visit the trauma memory to re-process this memory (e.g., Ehlers, 2013; Shapiro, 2001). Hence, while TRiM functions to assess and triage as opposed to therapy, there appears some elements of trauma therapy that inadvertently occur through the TRiM process of talking through the trauma. Indeed, participants discussed how re-visiting the trauma helped them remember forgotten aspects, chronologise the trauma memory, and cognitively make sense of the event, which helped them process and move past the trauma.

This finding highlights opportunities for future research, in terms of whether people attending TRiM required future intervention for the trauma, considering they may have appeared to progress in processing the trauma, compared to those not attending TRiM. The

current research suggests that longitudinal exploration of outcomes post-intervention appear more relevant, considering the time participants needed to process the traumatic incident.

Subtheme Normalising Trauma Reactions. The final connection to previous research relates to participants' experience of normalising their trauma reactions. Previous early post-trauma interventions research demonstrated that talking about the trauma and it's impacts with others normalised people's experiences (Firing et al. 2015; Robinson & Mitchell, 1993). The current findings add to the existing research through offering understanding into people's experiences of this normalisation. Participants expressed relief at knowing their reactions were normal responses, which improved their distress. Also, the findings highlighted that despite mental health practitioners already held knowledge of mental health, they appreciated reminders of this knowledge as they navigated the lived experience of going through a trauma. This finding highlights organisational implications, in terms of the benefits of normalising trauma reactions with mental health practitioners.

Strengths and Limitations

Strengths of the current research included the rigour and transparency of the research. For instance, the researcher followed the systematic process within IPA and evidenced the research process with exerts from the analysis. Additionally, the researcher used multiple supervision sources serving as a quality control for the research, including the researcher's supervisor and University tutors with extensive experience using qualitative research. Lastly, the rigour of the research was enhanced by the researcher completing a reflective diary to allow bracketing of their interests to reduce imposing a framework on the findings.

Limitations of the current research included the somewhat restricted comprehensiveness and completeness of the analysis. For instance, the sample included six

participants who were mainly White British females, which compromised the comprehensive of the analysis compared to attaining a higher proportion of the experiences of males or people from a BAME background going through TRiM. Lastly, the limited involvement of participants in constructing the interview schedule and evaluating the findings also compromised the rigour of the research.

[*]Reflections

I was conscious that my clinical practice could influence my focus on trauma therapy processes, particularly my interest in emotional processing, within participants' narratives. To ensure this interest did not skew my focus when analysing the data, I noted my initial interpretations of therapy processes and emotional processing prior to engaging with the data, known as bracketing (Tufford & Newman, 2010). I then remained conscious of fully engaging in the analytic process of IPA to protect against my experiences imposing a framework on the data.

Conclusions

Overall, the current research added to empirical understanding into people's experiences of early post-trauma interventions, specifically TRiM within mental health services. The findings suggested that mental health practitioners experienced significant trauma reactions after traumatic incidents, without disclosing this distress to colleagues. Practitioners' valued acknowledgement and appreciation of their role in the traumatic event, and some were able to grow from the trauma. Making sense of the trauma during the TRiM process appeared to help practitioners organise the trauma memory and create new perspectives, lessoning their shame and guilt related to the trauma. Practitioners described

[*] This section is written in the first person to reflect the active role the research had within the research.

peer-delivered intervention facilitated sharing their experiences, however, for some this familiarity left them unable to disclose the extent of their distress.

The current findings highlighted organisational implications specific to TRiM and wider responses to practitioners experiencing trauma at work. Future research is needed to further understand people's experiences of early post-trauma interventions to build an empirical foundation.

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3. PUBLIC DISSEMINATION OF THE THESIS

The Literature Review: The Effectiveness of Early Post-trauma Interventions on Employees' Psychological Distress After Experiencing Trauma at Work

Introduction

Certain occupations incur trauma for their employees, such as people working in the military, or in emergency response services (MacEachern, Jindal-Snaps, & Jackson, 2011; Porter, Hoge, Tobin, Donoho, Castro, Luxton & Faix, 2018). People also experience unexpected trauma at work, including violence or serious and fatal accidents (Price, Baker, Bee & Lovell, 2015; Tehrani, Walpole, Berriman & Reilly, 2001). People can experience psychological distress after a trauma, such as horror, distressing thoughts and memories and reliving the traumatic event (Paton & Violanti, 201; van der Kolk, 2000). To support employees' after experiencing trauma at work, organisations offer early post-trauma interventions. These interventions generally aim to ease psychological distress following exposure to trauma by applying crisis intervention and education to explore the traumatic event (Raphael & Wilson, 2000; Richins et al., 2019).

However, research into how effective these interventions are in reducing psychological distress remains unclear. Previous research both support (Everly, Boyle & Lating,1999; Flannery, George & Everly, 2004; Richins et al., 2019) and criticise (Lewis, 2003; Maglione et al., 2021; Rose, Bisson, Churchill, & Wessley, 2002) these interventions. Consequently, organisations appear left in a dilemma of supporting employees' exposed to trauma with interventions that do not have clear support from research. Previous reviews of the research failed to capture the various occupations encountering traumatic incidents, or did not use statistical analyses to evaluate the effectiveness of these interventions. Therefore, the current meta-analysis aimed to provide an up-to-date statistical analysis of the research into

early post-trauma interventions, which captured the wide-ranging nature of the occupations encountering trauma at work.

Method

Several research databases were searched to gain a comprehensive overview of the research into the effectiveness of early post-trauma interventions on employees' psychological distress after experiencing a traumatic event at work. Twenty studies were identified as relevant to include in this meta-analysis. These studies varied in their quality, which impacted on the studies ability to accurately assess the effectiveness of the interventions. For instance, people in the studies were often aware of their involvement in the study, which could influence how they reported their psychological distress post intervention. The effectiveness of the interventions was assessed by comparing people's psychological distress after the intervention to other people who did not receive an intervention, or to people's psychological distress before the intervention.

Results

Occupations within the analysis included the military, police and prison staff, emergency services, e.g., firefighters, and retail workers. The types of traumatic incidents employees' experienced included witnessing the death of others, handling bodies of those who had died, life-threatening situations, natural disasters, and witnessing other people's self-harming and suicidal behaviours. The types of psychological distress this meta-analysis was able to explore were depression, anxiety, substance misuse, and general psychological health. The varying quality of the studies did not adversely impact the findings from this meta-analysis. The current meta-analysis found that early post-trauma interventions were effective, i.e., statistically significant, in reducing depression and anxiety for employees' exposed to

trauma at work. This finding suggested that people receiving early post-trauma interventions showed lower levels of depression and anxiety compared to people who did not receive an intervention after experiencing a trauma at work, or compared to people's depression and anxiety prior to the intervention. Regarding substance misuse and general psychological health, the meta-analysis showed that early post-trauma interventions were not effective. This finding suggested that people receiving early post-trauma interventions did not show a difference in their levels of substance misuse and general psychological health compared to people who did not receive an intervention, or compared to people's pre-intervention levels. Of note, people receiving these interventions showed slightly higher levels of substance misuse, compared to those not receiving an intervention, however, this difference was not statistically significant. Lastly, the findings suggested that people attending single sessions of the interventions showed greater improvement in depression compared to those attending multiple sessions. Other differences between studies, such as the number of traumatic events experienced by employees', whether the intervention was manualised or not, the length of the intervention, or the different occupational groups receiving the intervention, did not impact upon the effectiveness of the intervention.

Conclusion

This meta-analysis added to increasing support for early post-trauma interventions for people experiencing trauma at work. This meta-analysis highlighted specifically the effectiveness for depression and anxiety for people who have been exposed to trauma at work. However, this support should be interpreted with caution due to the limitations and inconsistency of the research available. Hence, research with higher quality is needed to enhance clarity and further evaluate early post-trauma interventions.

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The Empirical Paper: Mental Health Practitioners' Experience of Trauma Risk Management

Introduction

People working mental health services encounter traumatic events at work. Mental health practitioners can experience violence at work, witness service users' show self-harming and suicidal behaviours, and witness or become aware of the death of a person (Price, Baker, Bee & Lovell, 2015; Kasmi, Duggan & Vollm, 2020; Royal College of Nursing, 2018). These traumatic events can cause people to develop mental health difficulties, have increased accidents at work, and sickness absence (Carleton, et al., 2018; McFarlane & Bryant, 2007; Stanley, Hom & Joiner, 2016). To support mental health practitioners experiencing trauma at work, organisations employ early post-trauma interventions, which aim to ease psychological distress following exposure to trauma (Richins et al., 2019). However, research into early post-trauma interventions highlight discrepancies between objective measures of mental health difficulties and subjective reports of those attending the interventions (Richins et al., 2019). This discrepancy favouring subjective reports advocates for further exploration of people's experiences of attending these interventions (Yardley, 2000). However, such research into people's experiences remain very limited (Firing, Johansen & Moen, 2015; Greenberg, Langston, Iversen & Wessely, 2011). This lack of research remains true for the early post-trauma intervention employed by some NHS trusts, Trauma Risk Management (TRiM) (Flaherty & O'Neil, accessed April 2022). NHS trusts, consequently, employ an early post-trauma intervention that does not have support from research. Therefore, the current research aimed to develop an understanding into mental health practitioners experience of TRiM within a mental health service.

Method

Six participants took part in an interview to explore their experiences of going through TRiM. TRiM's peer-delivered system meant that colleagues within the service delivered the intervention. The type of traumatic incidents experienced by practitioners were service users' attempting to end their life by suicide and either surviving or dying as a result. The interviews were semi-structured, meaning the researcher asked specific questions about participants' experiences of TRiM but would explore participants' individual answers further. The interviews were then analysed using Interpretative Phenomenological Analysis, which focuses on capturing the participants' individual experience of going through TRiM, such as what it was like for them and how they made sense of their experiences. The analysis identified themes across participants experiences, i.e., patterns of similar experiences.

Findings

Two themes were identified, the first theme 'The Aftermath of the Trauma' detailed the magnitude of the traumatic incident the participants' experienced. Participants described the horror of the trauma they experienced and also detailed their reactions to the trauma, which included feeling numb, like the traumatic incident wasn't real, and preoccupation about the trauma and it's impacts. Despite these significant reactions, participants described keeping their distress to themselves and carrying on with their work. This lack of talking to others about their distress appeared to stem from participants fear of exposing their distress or to avoid distressing others by talking about the trauma. Participants also described experiencing guilt and shame related to the traumatic event, which appeared resolved by talking through the trauma and developing new perspectives. After the trauma, participants also described being acknowledged and appreciated by the service, which they valued. A growth from the trauma

was reported by some participants, who described personal and professional learning, and increased confidence and resilience.

The second theme 'Re-visiting the Trauma' detailed how difficult participants found talking about the traumatic incident as part of the TRiM sessions. These difficult conversations were eased by the interpersonal skills and familiarity with the TRiM practitioner. Participants described the comfort of already knowing their TRiM practitioner and that they already felt understood by them. However, for some, a familiar TRiM practitioner meant that they could not fully disclose the extent of their distress. Talking through the trauma and it's impacts appeared to help participants' make sense of what happened and how it affected them, helping them to move past the trauma. Lastly, participants described that the impacts of the trauma, such as changes in their mental health, were made normal, which helped reduce their distress related to experiencing these changes. Making sense of the trauma appeared similar to elements of therapies for trauma, despite TRiM not being a trauma therapy.

Conclusion

This research offered better understanding into people's experiences of going through the early post-trauma intervention TRiM. The findings from the research should be taken as one way in which people's experiences of an early post-trauma intervention could have been interpreted. Considering this understanding remains an under researched area, more research is needed to enhance understanding into people's experiences of early post-trauma interventions to build a research foundation for their use.

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Appendices

Appendix 1

The University of Birmingham Research Governance and Ethics Team Sponsorship Letter

UNIVERSITY OF BIRMINGHAM
FINANCE OFFICE

Miss Lauren Patton
School of Psychology
University of Birmingham

Wednesday, 5 May 2021

Dear Lauren Patton

Project Title:	**Mental Health Practitioners' Experience of Trauma Risk Management: An organisational response to potentially traumatic events within a mental health service.**
IRAS ID:	**288593**
Sponsor Reference:	**RG_20-173**
UoB Ethics Reference:	**ERN_20-1751**

Under the requirements of UK Policy Framework for Health and Social Care Research, the University of Birmingham agrees to act as Sponsor for this project. Sponsorship is subject to you obtaining a favourable ethical opinion, HRA approval and NHS R&D management approval where appropriate.

As Chief Investigator, you must ensure that local study recruitment does not commence until all applicable approvals have been obtained. Where a study is or becomes multi-site you are responsible for ensuring that recruitment at external sites does not commence until local approvals have been obtained.

Following receipt of all relevant approvals, you should ensure that any subsequent amendments are notified to the Sponsor, REC, HRA and relevant NHS R&D Office(s), and that an annual progress report is submitted to the Sponsor, REC and NHS R&D departments where requested.

Please ensure you are familiar with the University of Birmingham Code of Practice for Research (http://www.birmingham.ac.uk/Documents/university/legal/research.pdf) and any appropriate College or School guidelines.

Finally please contact researchgovernance@contacts.bham.ac.uk should you have any queries.

You may show this letter to external organisations.

Yours sincerely

Dr Birgit Whitman
Head of Research Governance and Integrity

cc: Dr Christopher Jones (School of Psychology)

Appendix 2

The Health Research Authority's Ethical Approval Letter

Miss Lauren Patton
Trainee Clinical Psychologist
Birmingham and Solihul Mental Health Foundation Trust
52 Pritchatts Road
University of Birmingham
Edgbaston
B15 2SAN/A

Email: approvals@hra.nhs.uk
HCRW.approvals@wales.nhs.uk

01 June 2021

Dear Miss Patton

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**Mental Health Practitioners' Experience of Trauma Risk Management: An organisational response to potentially traumatic events within a mental health service.**
IRAS project ID:	**288593**
Protocol number:	**RG_20-173**
REC reference:	**21/HRA/2104**
Sponsor	**University of Birmingham**

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?
HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report

(including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations?
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

What are my notification responsibilities during the study?

The *"After HRA Approval – guidance for sponsors and investigators"* document on the HRA website gives detailed guidance on reporting expectations for studies with HRA and HCRW Approval, including:

- Registration of Research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics and is updated in the light of changes in reporting expectations or procedures.

Who should I contact for further information?
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **288593**. Please quote this on all correspondence.

Yours sincerely,

Rachel Katzenellenbogen
Approvals Specialist

Email: approvals@hra.nhs.uk

Copy to: Dr Birgit Whitman

Appendix 3

The Local Research and Development Department Ethical Approval E-mail

IRAS: 288593 – Trauma Risk Management In Mental Health Services - [redacted] - No objection

RESEARCHANDINNOVATION [redacted]

OID Version 2 26042... 773.8 KB

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This message is high priority.

Dear Lauren

IRAS: 288593 – Trauma Risk Management In Mental Health Service [redacted] Foundation Trust – No objection

As per Health Research Authority Approval letter dated **1 June 2021,** a local capability and capacity review is not required for the above named study.

[redacted] NHS Trust has reviewed the HRA Approval letter and supporting documentation an has no objection to this study commencing.

Start and end dates:

We agree to start this study **with immediate effect.**
We understand that recruitment will end on **30/05/2022.** We are aware that at this point, archiving is the responsibility of University of Birmingham.

Recruitment figures:

Please note that you will be contacted by the R&I department periodically to obtain your current recruitment figures.

During your study:

During the study, researchers are required to fulfil the following duties:

- Inform R&I of any amendments to the study, both substantial or non-substantial
- Inform R&I when the study has completed at the Trust
- Inform R&I of the total recruitment number at the Trust
- Submit a final report to the R&I department.

All of the above can be submitted to [redacted]
If you wish to discuss further please do not hesitate to contact us.
Finally, we would like to wish you all the best with your research.
Kind regards
Research & Innovation.

Appendix 4

Participant Information Sheet for Participants

UNIVERSITY OF BIRMINGHAM

IRAS ID: **288593**

PARTICIPANT INFORMATION SHEET (PIS)

Title of Project: Mental health Practitioners experience of Trauma Risk Management: an organisational response to potentially traumatic events within a mental health service.

Name of Researchers: Lauren Patton (Trainee Clinical Psychologist)

Invitation and Brief Summary

You are invited to take part in a research study about mental health staffs' experience of taking part in Trauma Risk Management after a traumatic event at work. This research is sponsored by the University of Birmingham. We, the University of Birmingham, are looking for around twenty people to take part in this research. Before you decide, it is important for you to understand why the research is being done and what it will involve. **Please take time to read the following information carefully** and discuss it with others if you wish, including friends, relatives, and your general practitioner. If there is anything you do not understand, or if you would like more information, please ask. Thank you for reading this.

Mental health practitioners can experience traumatic events at work, including staff assaults, patient suicides, and self-harm. These traumatic events can have a large impact on staffs' mental and physical wellbeing and even lead to staff needing to take time off work. [redacted] have support services for staff who experience traumatic events at work, including Trauma Risk Management (TRiM). There is little research about using TRiM in mental health services and so the University of Birmingham and [redacted] are researching TRiM. As such, you are invited to take part in this research to explore mental health staffs' experiences of Trauma Risk Management. Taking part in this research would involve an interview to talk about your experience of Trauma Risk Management.

If you do not wish to participate in the research, this will not affect the support you receive from [redacted]

What would taking part involve?

Staff that experience a traumatic event at work and then attend Trauma Risk Management will be invited to take part in the research. **If you agree to take part, you will be asked to attend an interview lasting approximately one and a half hours**. The interview will take place either within [redacted] or on Microsoft Teams. You will be asked to give consent before taking part in the interview and for the interview to be audio recorded. In the interview you will be asked questions about your experience of TRiM, such as what you actually did in TRiM and what this was like for you. We will check your wellbeing throughout to make sure you are ok to continue with the interview. We will offer you support throughout the research if you need it.

There will be no impact on the services provided [redacted] when the research ends

[redacted]

The information collected about you may be used to support other research in the future and may be shared anonymously with other researchers. This information would not be your personal information, but information from the interview.

If you have participated in another research study within the last 6 months, please make us aware if you wish to take part in this study.

What are the possible benefits of taking part?

This research will help us understand how [redacted] offer support to staff who experience traumatic events at work.

What are the possible disadvantages and risks of taking part?

As the interview will involve questions about your experiences of TRiM you might think back to the traumatic event involved and feel distressed. But we do not expect any enduring distress from the interview and we will check your wellbeing throughout. We will not ask you any questions about the traumatic event you experienced.

If you find the interview difficult and wish to continue, please inform the researcher. With your consent, the researcher will inform the relevant team manager so that [redacted] can provide further support.

If you find the interview difficult and would like to stop the interview, please inform the researcher. The interview will stop and you will be offered support. It will be your choice whether you wish to continue the interview at a later date, not continue with an interview at a later date and the researchers can keep the interview we have recorded, or to delete the interview and withdraw from the study. These options will be discussed with you and you can make the best choice for yourself.

If you show a lot of distress in the interview then we will offer you support and we will inform the relevant team manager so that [redacted] can provide further support. In this situation, we would stop the interview and discuss with you at a later date whether you wish to re-arrange the interview, allow us to keep what has been recorded of the interview, or to withdraw from the study and have your interview deleted.

Disclosing risk

We have a duty of care to ensure your safety. Therefore, if you tell us about any risk to yourself or someone else then this information will need to be given t[redacted] support service managers to make sure you are offered timely support. By risk we mean physical or psychological harm towards yourself or others. If the information you disclose suggests you may benefit from additional psychological support, this information will also be passed onto [redacted] support service managers so they best assist you. Similarly if you disclose information around unethical practice, e.g., poor care/treatment for a patient, then this information will be passed onto support service managers

[redacted]

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Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do not wish to take part in the research study, this will not impact on the support you receive from [redacted].

What if I do not wish to continue with the study?

You can withdraw from the research without giving a reason, you just need to inform the researcher of your decision. If you do decide to withdraw during the interview your interview recording will be deleted and not used. You will also have one week after the interview to withdraw from the research. One week after the interview date your interview will be transcribed and your name and contact details will be removed from your interview. Once this has happened we will no longer be able to identify your interview and will not be able to withdraw your interview from the research. We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

Would my taking part in this study be kept confidential?

We will need to use information from you for this research project.

This information will include:

- your name
- your contact details, e.g., phone number and e-mail.
- your job and time in the service

This information will be kept within [redacted] only.

People will use this information to do the research or to check your records to make sure that the research is being done properly.

People will use this information to do the research or to check your records to make sure that the research is being done properly.

People who do not need to know who you are will not be able to see your name or contact details, your interview will have a code number instead. We will keep all information about you safe and secure. Once we have finished the study, we will keep some of the data so we can check the results. The report we write about the data we collected will present quotes from the interviews, but we will write the report in a way that no-one can work out that you took part in the research. The overall results of the study may be published in scientific journals. However, all your personal information will remain confidential.

The only circumstances in which confidentiality would be breached would be in the rare situation in which it was judged that you or someone else was at risk of serious harm or if a court applied for the information. In these circumstances, we would discuss the matter with you and would only disclose information that is needed.

Who is organising and funding the research?

The research is being carried out by Lauren Patton as part of a Clinical Psychology Doctorate, under the supervision of Dr Christopher Jones. [ ] supports the study. The research may also contribute towards a Masters qualification for an additional student.

This research is sponsored by the University of Birmingham. This research has been reviewed by the governing process for postgraduate research at the University of Birmingham to protect your safety, rights, wellbeing and dignity and has been given favourable opinion.

What will happen to the results of the research?

This study is being carried out as part of a Clinical Psychology Doctorate. It is also hoped that the results will be published in an academic journal and shared with [ ] services. Any research publication would not identify you individually.

Expenses and payments

We are unable to offer any payment or reimbursement of expenses that you may incur in participating in this study.

What if there is a problem?

We believe this is a low-risk study but if you have a concern or complaint about any aspect of the way you have been treated during the course of this study, you may contact the Principle Investigator: Dr Elizabeth Newton,

If you have been affected by any issues raised by this study and require additional support, please do not hesitate to contact services for support:

[ ]

Samartians: Tel: 116 123; email: jo@samaritans.org

Where can you find out more about how your information is used?

You can find out more about the research by contacting Lauren Patton:

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You can find out more about how we use your information at:

www.hra.nhs.uk/information-about-patients/

Our leaflet available from **www.hra.nhs.uk/patientdataandresearch**

By asking one of the research team

By sending an email to dataprotection@contacts.bham.ac.uk

Appendix 5

Consent Form for Participants

UNIVERSITY OF BIRMINGHAM

IRAS ID: **288593**
Study Number:

CONSENT FORM

Title of Project: Trauma Risk Management: an organisational response to potentially traumatic events within a mental health service.

Name of Researcher: Lauren Patton (Trainee Clinical Psychologist)

	Please initial to confirm
1. I confirm that I have read the information sheet dated..... (version 4) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that the interview will be audio recorded.	
3. I understand that my participation is voluntary and that I am free to withdraw without giving any reason, without my care or legal rights being affected. I understand that from one week after the interview, I can no longer withdraw from the research as my interview will have been anonymised and no longer retrievable.	
4. I understand that relevant sections of my data collected during the study may be looked at by individuals from Trust where there is an indication of risk of harm to myself or others, or where there is an indication of unethical behaviour from myself or others, or where I may benefit from additional psychological support. I understand that this information will be passed on t support service managers.	
5. I understand that the information collected about me may be used to support other research in the future and may be shared anonymously with other researchers.	
6. I confirm that I am not currently participating in another research study, nor have participated in another research study within the last 6 months.	
7. I agree to take part in the above study.	

Name of Participant _____ Date _____ Signature

Name of Person _____ Date _____ Signature
taking consent

When completed: 1 for participant; 1 for researcher site file

Version 4 26.03..2021 IRAS ID: **288593**

Appendix 6

Demographic Information Form for Participants

UNIVERSITY OF BIRMINGHAM

IRAS ID: **288593**
Study Number:

Demographic Information

Title of Project: Trauma Risk Management: an organisational response to potentially traumatic events within a mental health service.

Name of Researcher: Lauren Patton (Trainee Clinical Psychologist)

Demographic Question	Answer
Gender	
Age	
Ethnicity	
Job Role	
Length of time working in the service	
Do you live alone or with others?	
Please give a description of the incident you attended TRiM for	
Have you experienced serious trauma previously? If so, did you receive treatment?	

Version 2 26.04.2021

Appendix 7

Interview Schedule for Semi-structured Interviews

IRAS ID: **288593**

Interview Schedule

Confirm verbal consent

The Beginning – 10 minutes

How did you hear about TRiM?

Could you give me a brief description of what happened during TRiM, from when it started to the final session? (*Prompts: What did you attend first? What was the last session you went to? Did you attend the Trauma Incident Briefing before the Individual assessment session?)*

What made you decide to go to TRiM?

Trauma Incident Briefing - 15 minutes

Tell me about the Trauma Incident Briefing (TIB)?

What was the experience of TIB like? (*Prompts: thoughts, feelings, being with others, whether they found it helpful or not)*

What was it like hearing information about the incident? (*Prompts: thoughts, feeling, feel better/worse)*

Did they tell you about the common reactions to trauma?

What was that like to hear about common reactions? (*Prompts: emotions, reactions)*

Did they talk about advice on coping?

What was it like hearing advice on coping? *(Prompts: thoughts, feelings, reactions)*

Assessment session - 15 minutes

Can you describe what happened in the Assessment session?

What was the experience like of the assessment session? (*Prompts: thoughts, feelings, which bits did you like/not like)*

What did you and the assessor talk about?

Did you talk about what happened about the traumatic incident? (*Prompts: how was that, how did that feel, how much information did you give)*

What was that experience like, talking about what happened? *(Prompts: Mentally, emotionally, physically, did it help/not)*

Can you tell me abit about the practitioner? (*Prompts: What were they like, how easy was it to speak to them, were they approachable)*

What was it like talking about your experiences with the person doing the session? *(Prompts: relationship, support, trust)*

Did you have any further appointments? What were they like?

Did you find the session helpful/unhelpful? (*Prompts: why was it helpful/unhelpful)*

The Process - 15 minutes

What was it like to go through TRiM? (*Prompts: What do you think about TRiM at work? How did you feel going through TRiM?)*

What do you think was helpful/unhelpful about TRiM?

Has going through TRiM made a difference for you? (*Prompts: Has there been any impact, positive or negative? What would you say has changed?)*

Would you recommend TRiM to someone else? (*Prompts: Why/why not)*

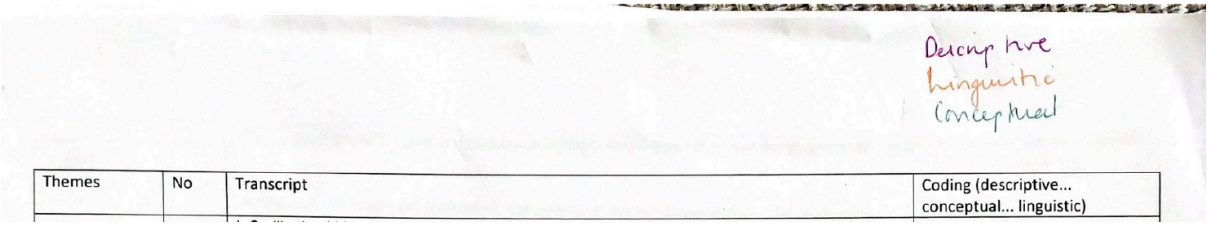
End recording

Debrief -further support?

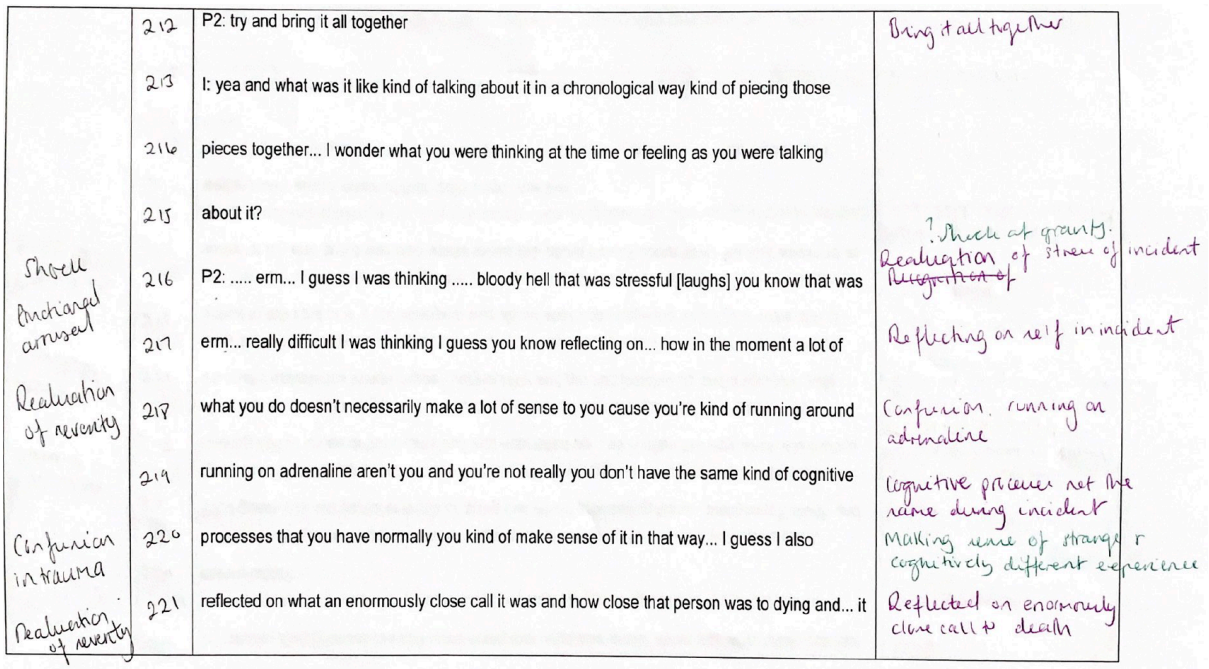
One week – transcribed.

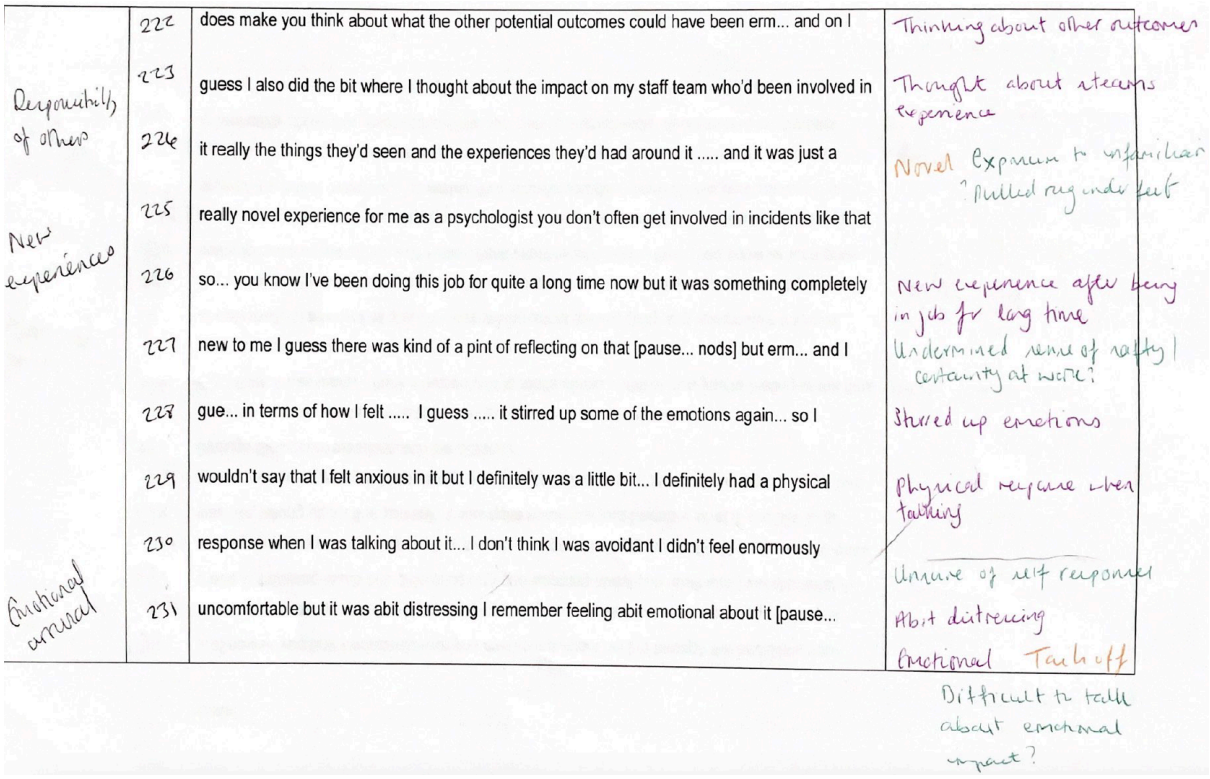
Appendix 8

Example of Initial Coding and Themes for Participant 2



Themes	No	Transcript	Coding (descriptive... conceptual... linguistic)
	202	erm	
	203	I: I wonder if you can tell me abit more about that what was useful about it or what made you feel	
	204	comfortable?	
Sense making / Processing trauma	205	P2: I guess it is just useful in terms of doing that whole processing thing... just going through and	Useful to process
	206	making abit of sense of the events that had happened so... as is often the way when you have a	Making sense of events Talking knowledge
Memory under	207	traumatic experience things happen very quickly and get abit jumbled up and it was just quite	Trauma is quick + jumbled
	208	useful to talk kind of in a chronological way about what had happened to just just make abit of	Talk chronologically to make sense of it.
Sense making / Processing trauma	209	sense of it... erm and it was also useful to just talk about that bit about how I felt that weekend as	Making sense of how she felt after incident
	210	well to make abit of sense of that really to go over that.	
	211	I: yea	Talking with someone as a means to understand self + experience


Shock
Anchiangd aroused
Realisation of severity
Confusion in trauma
Realisation of severity
212 P2: try and bring it all together
213 I: yea and what was it like kind of talking about it in a chronological way kind of piecing those
216 pieces together... I wonder what you were thinking at the time or feeling as you were talking
215 about it?
216 P2: ..... erm... I guess I was thinking ..... bloody hell that was stressful [laughs] you know that was
217 erm... really difficult I was thinking I guess you know reflecting on... how in the moment a lot of
218 what you do doesn't necessarily make a lot of sense to you cause you're kind of running around
219 running on adrenaline aren't you and you're not really you don't have the same kind of cognitive
220 processes that you have normally you kind of make sense of it in that way... I guess I also
221 reflected on what an enormously close call it was and how close that person was to dying and... it
Bring it all together
? Shock at severity.
Realisation of stress of incident
Reflecting on self in incident
Confusion, running on adrenaline
Cognitive processes not the same during incident
Making sense of stranger + cognitively different experience
Reflected on enormously close call to death


Responsibility of others
New experiences
Emotional arousal
222 does make you think about what the other potential outcomes could have been erm... and on I
223 guess I also did the bit where I thought about the impact on my staff team who'd been involved in
226 it really the things they'd seen and the experiences they'd had around it ..... and it was just a
225 really novel experience for me as a psychologist you don't often get involved in incidents like that
226 so... you know I've been doing this job for quite a long time now but it was something completely
227 new to me I guess there was kind of a pint of reflecting on that [pause... nods] but erm... and I
228 gue... in terms of how I felt ..... I guess ..... it stirred up some of the emotions again... so I
229 wouldn't say that I felt anxious in it but I definitely was a little bit... I definitely had a physical
230 response when I was talking about it... I don't think I was avoidant I didn't feel enormously
231 uncomfortable but it was abit distressing I remember feeling abit emotional about it [pause...
Thinking about other outcomes
Thought about stressful experience
Novel Experience to unfamiliar
? Pulled regardless feel
New experience after being in job for long time
Undermined sense of safety / certainty at work?
Stirred up emotions
Physical response when talking
Unaware of self response
Abit distressing
Emotional Tail off
Difficult to talk about emotional impact?

		nods]	
	232	I: of course yea and I wondered erm you mentioned about talking through the decisions you	
	233	made not making much of a difference erm and worrying about your staff and I wonder what it	
	234	was like talking about that you said it was quite emotional and I wonder what it was like to go	
	235	through those conversations with the person?	
Sense making	236	P2: I think it was useful I think it helped you to make sense... abit of how you're feeling at the time	Helped make sense of feeling
Guilt	237	at now really in terms of all that bit I was talking about feeling guilty and responsible it kind of	making sense of guilt + responsibility
	238	helps to make sense of that and I said I think I said before didn't I that... you know as time goes	Hard to articulate
Change in guilt	239	on and you reflect more you you realise that actually you don't need it's not your you don't need	Time + reflection changed guilt
	240	to feel guilty about it or responsible it was just part of a much wider decision making process...	Gave perspective to actions

An time obtained self from trauma able to integrate thoughts + reason into emotion.

	241	erm	
	242	I: I was gonna ask what was that like to reflect on the guilt and what had happened?	
	243	P2: erm ..... I don't... I'm not sure if it was it's not the most comfortable experience but I don't	Abit uncomfortable reflecting on guilt
Emotional arousal	244	think it was enormously uncomfortable... I think... it brought some of those feelings back up but it	Brought feelings back up Suppression of feelings?
Sense making	245	also helped to... attach some kind of cognition sense making to it really to help you kind of move	Attach cognition to make sense & process it
	246	past and process it ..... erm... yea	
	247	I: are you able to tell me abit more about that?	
	248	P2: about what it was like you're really digging deep here Lauren [laughs] well I don't think I had	
	249	any of those like big light bulb moments of oh my gosh you did this wrong I think I'd already done	No light bulb moments
Sense making	250	quite a lot of sense making around it but I think what it did help me to do was think... you feel	Already started sense making
			Need to make sense of situation from beginning
			Talking to self
	251	really guilty about that but actually when that decision was made there were no other choices	Retrovaluing decisions in incident
Sense making	252	there were no other options... erm I wouldn't have been able to have predicted at that point what	Attempting to change emotions
	253	the person was gonna go through following that decision making... erm and actually you know the	
New experiences	254	whole thing was completely... different to what we normally experience... and you know it was	Unexpected, unprepared for incident
	255	kind of it was one of those experiences I think I came to the conclusion that I did the best thing at	Internal thinking about self + actions
	256	the time and therefore you don't need to feel guilty about it so it was helpful it probably helped me	
Change in guilt	257	move past that feeling of guilt quite quickly I would say [nods pauses]	Moved past guilt
	258	I: mm yea I was gonna say I wonder if you could tell me abit more about that realisation it sounds	
	259	like?	
Relief	260	P2: I think I think it was helpful it was abit of a relief [nods]... you know... erm and you know I	Relief

	261	talked abit about that kind of weight lifting off your shoulders there was a big moment around that	Weight off shoulders
Relief	262	quite quickly when I when I knew the person was going to survive... but then I guess that was	Knew person would survive
	263	also a slow process of that over the course of the next few weeks as you... sense make and that	Slow process of relief
Guilt	264	kind of guilt was there and it continued abit but then I guess I think the trim assessment was very	Guilt remained
processing	265	helpful in thinking about... about that as well ..... and about processing that and starting to feel a	Trim assessment helped processing guilt
Relief	266	little bit better and abit lighter in terms of that [pauses... nods]	Feeling better + lighter
	267	I: and I wondered if you could tell me more about how that process worked... I wonder how you	
	268	got from carrying that guilt to then that being lifted?	
	269	P2: I think it was purely it was predominantly to do with just talking about the facts of what	Talking about facts
Sense making	270	happened having a narrative around it... its like laying down the facts isn't it and having that	Having a narrative

Talking through helped separate from rawness of trauma

Prac. as witness to sense making	271	person who is you're trim practitioner being the person that's kind of witness to that... and then	Practitioner witness to feels
	272	when you say it out loud you then have a different perspective on it cause its' in it's in a kind of	Saying it outloud gave different perspective
	273	logical order and you think and you look back and you have abit of objectivity about and think well	Look back with objectivity
Change in perspective	274	actually... you know you know its kind of separates it from the emotion a little it and helps you be	Separate from emotion
Change in emotion	275	abit more objective about it	More objective about it
	276	I: I wonder if you can tell me abit more about detaching from the emotion abit more and being	
	278	more cognitive around it... I wonder if you can tell me abit more about that	
	279	P2: ..... erm... in terms of the experience of it?	
Profession as facilitating thought	280	I: yea	
	281	P2: erm ..... well I guess I'm a psychologist Lauren so I'm kind of used to doing al these things	Job means used to reflecting, reasoning

Appendix 9

Example of Initial Themes for Participant 2

Theme/subthemes	Line	Quote
Worrying about everybody else	68	'worrying about everybody else'
I'm the manager and I'm modelling for my team	361-364	'in the service I work in abit of an ethos of…bad things happen all the time and we do we do have to have a degree of resilience and get on with it…erm and if you're a senior manager…its almost more of the case if that makes sense and you're modelling to your team about it'
I'm responsible for my staff/Guilt	.81	'I felt guilty because one member of staff was particularly upset…was very upset because the way she'd been exposed to the incident was entirely as a result of the decision making I made in that incident so'
I'm ok and I don't want to traumatise somebody	298	'often you don't wanna share things cause you think you might traumatise somebody else'
An enormously close call	221	'I also reflected on what an enormously close call it was'
People were obviously distressed	50	'people were obviously distressed in the room when it [incident statement] was read out'
They were gonna survive	261-262	weight lifting off your shoulders there was a big moment around that quite quickly when I when I knew the person was going to survive'
My time to talk in a safe space	310-313	'it was a safe space…that there..were gonna be no consequences from it maybe I was not being judged…erm…that it was you know it was it was purely around kind of my wellbeing and supporting me so…you know it felt like I could use it fairly selfishly to be honest without having to worry about anybody else'
Making sense of the events	205-209	'it is just useful in terms of doing that whole processing thing…just going through and making abit of sense of the events that had happened so..as is often the way when you have a traumatic experience things happen very quickly and get abit jumbled up and it was just quite useful to talk kind of in a chronological way about what had happened to just just make abit of sense of it'

Normalising and validating what we already know	179-186	I think its useful to hear it cause it just it just kind of normalises and validates whats been going on because…you can I guess you can know everything about mental health and work with mental health and teach people how to understand their mental health…but that's a very different experience when you are to when you are the subject of that and you're having your own experiences of it and its very difficult to be objective when you're having your own experience around it…and I think what it does is it helps to have a bit of grounding and objectivity about it doesn't it in terms of just saying this is how you might feel when something like this has happened and its really normal'
Stirred up emotions talking about it	228-231	'it stirred up some emotions again…so I wouldn't say that I felt anxious in it but I definitely was a little bit..i definitely has a physical response when I was talking about it [event]..i don't think I was avoidant I didn't feel enormously uncomfortable but it was abit distressing I remember feeling abit emotional about it'
I know the practitioner and they're robust!	293-298	'I also know the trim practitioner fairly well so im very comfortable with her…so that made it easier…just feeling safe really to be honest you know it felt like a safe space it felt like it was confidential to say what I thought…and also it felt it it was somebody who was completely not involved in it…so I didn't have to worry about upsetting them I was fairly confident that that person was going to be robust enough to take what I was gonna tell them'
I couldn't tell her if I was struggling		'I wonder whether I would have found it more difficult if I was really struggling…er I think that you know me going into and saying im absolutely fine probably a reflection of that cause I probably cause this persons my peer…erm…not that I am someone that wouldn't admit you were struggling but you know if you're talking to somebody that you do know that is your peer…you don't wanna necessarily go in and go oh I'm a broken person I'm in pieces'
Hang on I can cope!	383-385	'you're just abit defensive about it I was abit defensive about it perhaps…you know have that kind of you know I'm wonder woman and I can deal with everything but praps I can't and its always abit uncomfortable if someone points it out to you'

New perspectives	130	'I found it very interesting having a personal experience of it and obviously having a different then having a different kind of insight into it'
Closure	434-435	I knew I wasn't gonna have to speak about it again and there was abit of closure really'
Service is doing something about the challenges of the job	587-590	'feel… more widely supported…erm by the service and I think that is really important in terms of having resilience as well cause I think you need to feel…like the service you work for has an awareness of the challenges of the job…and also erm…is putting your wellbeing at the forefront of that'

Appendix 10

Example of a Vignette for Participant 2

We had an enormously close call, but they were going to survive. I needed to role model to my team, I was responsible for my team and I really worried about them, I didn't want to traumatise anyone by talking to them about it. People were distressed, that was evident in the TIB. I had space to think about myself and make sense of what happened with the TRiM practitioner. I was assured it was ok not to be ok. It stirred up emotions talking about the incident. But the practitioner was robust and could take what I was saying. I knew the practitioner which meant they could challenge me and show me areas where I was wobbly. But I wouldn't have been able to say if I was really struggling. I gained a new perspective of the situation and I felt less guilty. I had closure and resolution to the incident. This is something work is doing to address the challenges in work.

Ideas: Trauma shock/magnitude – processing – new perspectives and less emotion Cognitive and emotional change.

Appendix 11

Development of the superordinate theme 're-visiting the trauma'

Participant 1

Theme	Line	Quote
Comfort in already knowing the practitioner	307-308	'I actually already knew her from she was a previous colleague in a previous job…and I was actually comforted by that that she was somebody I knew'
I wasn't entirely honest with her	373-376	"I don't think I was entirely honest with her with how much I had been struggling…because I wanted to tell her that everything was ok with me I think I had that feeling that I wanted to prove to her that I'd moved on to this big and better job…and that I'm doing so great and that you know you don't have to worry about me'"
Describing what happened was the hardest part/felt I was back there again	348-350	'when I went to the first trim session I really went into full detail you now with…thoughts feelings and behaviours at each step and at each…section so that was definitely the hardest cause it almost felt I was back there again really taking this erm..entire incident into detail'
Space to think about what I was going through	359-360	"I gave myself a little bit of time at home to just sort of think about it and keep it…sort of tidy'
Making my experiences normal	276	'almost normalises more difficult stress reactions by saying this is because of this'
Supported by work for something work had done	484-486	'I was glad that actually I'd had some…erm I was I was given time I was allowed time to go and do this it was something that work had done to me this incident had happened…to me and that I was being supported by work to resolve it'

Participant 2

Theme	Line	Quote
My safe space to make sense of events and me	205-209	'it is just useful in terms of doing that whole processing thing…just going through and making abit of sense of the events that had happened so..as is often the way when you have a traumatic experience things happen very quickly and get abit jumbled up and it was just quite useful to talk kind of in a chronological way about what had happened to just just make abit of sense of it'

Normalising and validating what we already know	179-186	'I think its useful to hear it cause it just it just kind of normalises and validates whats been going on because…you can I guess you can know everything about mental health and work with mental health and teach people how to understand their mental health…but that's a very different experience when you are to when you are the subject of that and you're having your own experiences of it and its very difficult to be objective when you're having your own experience around it…and I think what it does is it helps to have a bit of grounding and objectivity about it doesn't it in terms of just saying this is how you might feel when something like this has happened and its really normal'
Stirred up emotions talking about it	228-231	'it stirred up some emotions again…so I wouldn't say that I felt anxious in it but I definitely was a little bit..i definitely has a physical response when I was talking about it [event]..i don't think I was avoidant I didn't feel enormously uncomfortable but it was abit distressing I remember feeling abit emotional about it'
I know the practitioner and they're robust!	293-298	'I also know the trim practitioner fairly well so im very comfortable with her…so that made it easier…just feeling safe really to be honest you know it felt like a safe space it felt like it was confidential to say what I thought…and also it felt it it was somebody who was completely not involved in it…so I didn't have to worry about upsetting them I was fairly confident that that person was going to be robust enough to take what I was gonna tell them'
I couldn't tell her if I was struggling		'I wonder whether I would have found it more difficult if I was really struggling…er I think that you know me going into and saying im absolutely fine probably a reflection of that cause I probably cause this persons my peer…erm…not that I am someone that wouldn't admit you were struggling but you know if you're talking to somebody that you do know that is your peer…you don't wanna necessarily go in and go oh I'm a broken person I'm in pieces'
Hang on I can cope!	383-385	'you're just abit defensive about it I was abit defensive about it perhaps…you know have that kind of you know I'm wonder woman and I can deal with everything but praps I can't and its always abit uncomfortable if someone points it out to you'

Participant 3

Theme	Line	Quote
This is difficult to talk about	242-5	'it [talking about incident] was anxi- more anxiety erm more anxious…nervous at the start and quite upset…but erm once I'd started talking about it and I felt that she was listening…erm I wasn't feeling as nervous..erm and it was

		like…I wasn't feeling more that upset as well but I was trying to control myself but quite tearful as well'
I let it all out	256-260	'just letting all your feelings and emotions out…erm and then just that reassurance of someone saying to you you know yea its fine its fine you know carry on like tell me more…erm and just letting it all out erm I wasn't holding anything into myself at all..so I just felt like a big relief just coming out of me once I spoke to her…and her giving me the reassurance every so often as well'
Ok it is normal to feel like this	169-172	'it was scary at first obviously cuz I was keeping it all to myself then when Lucy said to me like it's normal erm to experience that I felt better thinking ok erm cuz I just thought you know I'm getting depressed over this I'm feeling all this anxiety and all this frustrating problems but once she said that its normal absolutely fine for you to feel like this I felt a lot better erm cuz I thought ok it is normal'
A relief coming from higher management	84-89	'it was a relief an absolute relief because I didn't know what was gonna happen so it was relief to you know to know you know coming from you know a higher management perspective the actual facts because I can say my colleagues can say one thing cause rumours were going around the whole hospital about this is gonna happen that's gonna happen so there was miscommunication in all sorts of ways but when its coming from actual management and she confirmed that you know it was coming from management what im saying I felt abit better it was like a relief coming off my chest'

Participant 4

Theme	Line	Quote
My space to get this out and talk about it	308-313	'it was helpful to kind of..i guess what it gave me was space to kind of piece together what had happened cuz I think up until that point I hadn't really been able to sort of put a timeline on it and say you know we did this first and then we did this I wasn't really able to do that that was quite difficult…erm but it started to give me abit of a narrative around around the incident which I hadn't really I could have talked about different bit of different times but it was all jumbled up in my head and I think…it really helped me kind of piece it together'
Bringing back those difficult memories	338-9	'it just it was bringing up those memories and stuff to mind while I was talking erm…which…I did find quite difficult'

She was genuinely interested in how I was feeling	374-8	'just kind of acknowledging you know that's ok you don't have to you don't have to be ok with that at the moment erm…and I think gen like they were genuinely interested in how I was feeling it wasn't just a sort of it did not feel like a tick box exercise it was a genuine interest in how are you feeling whats happened you know…erm and that made it a lot easier to talk to talk to them'
A relief coming from higher management	84-89	'it was a relief an absolute relief because I didn't know what was gonna happen so it was relief to you know to know you know coming from you know a higher management perspective the actual facts because I can say my colleagues can say one thing cause rumours were going around the whole hospital about this is gonna happen that's gonna happen so there was miscommunication in all sorts of ways but when its coming from actual management and she confirmed that you know it was coming from management what im saying I felt abit better it was like a relief coming off my chest'
Talking to someone who doesn't know the team/patient	30-31	'it felt like a really safe space 'cause it was someone I know that I don't directly work with erm so that was really positive'

Participant 5

Theme	Line	Quote
Talking in a group could get messy	287-92	'how it affects me is different to how it affects other people and the emotions I have attached to something are different to how others peoples did and then otherwise I think it could get abit lost and abit messy with all them emotions and facts and everything so I think it was good that it was done like that'
Focus on me	428-34	'the other trim I had was just about my relationship with this patient and again it was looking at how do we move forward with that what support I can look what support I can ask my manager for and things like that as well so it was looking at obviously how it was making me feel how it had actually affected my work and home life and then how what support I could have going forwards..'
The practitioner knew me and I was free to discuss issues	53-58	'I'd normally speak to someone the person who referred me to this because she knew kind of everything that was going on outside of work as well as inside of work so I'd normally go in because I had worked with her for a long time so I had quite a good relationship with her and I feel quite free to discuss them issues…erm and how it was affecting other things…'

	548-50	'I know that they felt they were quite conflicted cause they were like look I know what work means to you I know all of this stuff but like you're really not ok…erm so it was it was what I needed to hear cause they knew me whereas if I went to someone I didn't know I don't think I would have been so receptive to it'

Participant 6

Theme	Line	Quote
Normalised reactions	105-8	'felt like a bit of normalization of this was a stressful event and you know usually these things settle down and you kind of you know I guess trying to sort of you know explain what a normal response is to to an incident like that'
Making sense of reaction to trauma	139-142	'it was helpful to reflect on things a little bit and you know sort of as the …I guess the erm… the the sort of the …I guess emotional reaction to to something was was was sort of settling'
Easy to talk to practitioner	196-7	''I kind of found them very erm…you know easy easy to talk to you know I felt very comfortable erm… you know speaking about what happened'
I couldn't be honest if I needed to be	224-233	'there's some questions about you know erI I don't know as as an example erm you know if I was coping with some maladaptive ways of managing you know following an incident so… quite whether I would have felt comfortable being open about that you know to to essentially someone who's a colleague you not not directly a colleague but you know I think I think that's a potential you know so as an example if I was using alcohol as a way of managing erm… you know kind of you know you know my emotional reaction to an incident erm I don't know how you how easy it would be to be open about that'
It was structured and careful not to do damage	412-419	'kinda felt like it was right in terms of how to support someone I think erm I can't remember the you know the immediate debrief very well I think I did go to it erm… and erm …yeah but but but I think I think it's sort of erm.. cause I think I think there's something around the you know the risks with debriefs and and sort of you know the literature around that is you know that potentially can make things worse and so it kind of you know kind of felt like it was quite a careful process'

Appendix 12

Superordinate and Subthemes identified for practitioners experiences of TRiM, and the contributions to the themes from each participant.

Superordinate theme	Subtheme	Ella	Jade	Jasmin	Isobel	Sophie	Ben
The Aftermath of the Trauma		✓	✓	✓	✓	✓	
	Keep calm and carry on	✓	✓		✓	✓	✓
	Shame and guilt		✓	✓	✓	✓	
	Changes in internal processes	✓		✓	✓		✓
	Acknowledgement and appreciation			✓		✓	
	Growth after the trauma	✓	✓	✓		✓	
Revisiting the Trauma		✓	✓	✓	✓		✓
	The therapeutic alliance with the practitioner	✓	✓	✓	✓	✓	✓
	Making sense of what happened	✓	✓	✓	✓	✓	✓
	Normalising reactions to trauma	✓	✓	✓			✓