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The barriers and facilitators to help-seeking and recovery among psychologically distressed emergency service staff: A thematic synthesis

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The barriers and facilitators to help-seeking and recovery among psychologically distressed emergency service staff: A thematic synthesis

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Abstract

Objectives

To identify factors contributing to the mental health recovery of emergency service workers (ESWs) following exposure to occupational trauma, and the barriers and facilitators to mental health help-seeking behaviour among ESWs who identify as being psychologically distressed.

Background

ESWs are vulnerable to mental ill health, and reported occupational exposure to trauma as a major contributing factor. This has implications for workforce sustainability. There is uncertainty around which organisational interventions should be provided and how to engage trauma-exposed staff with supportive interventions.

Design

Qualitative thematic synthesis.

Methodology

Four databases (OVID MEDLINE, EMBASE, PsycINFO and SCOPUS) were systematically searched from January to March 2020. We also used citation tracking and reference chaining. A combination of the Critical Appraisal Skills Programme tool and quality appraisal prompts were used to exclude studies of inadequate quality. Results were synthesised using a thematic technique.

Results

Fourteen descriptive themes emerged from this review, categorised into two groups: factors contributing to mental health recovery, such as the need for downtime, peer support and reassurance, and factors influencing help-seeking behaviour, such as stigma, the nature of intervention delivery (mandatory vs non-mandatory, characteristics of intervention provider), and mental health literacy (emotional awareness, education and stigma).

Conclusion

Following traumatic exposure, ESWs appear to benefit from recovery time with access to informal support from trusted colleagues. It may be beneficial for organisations to facilitate ESWs' ability to detect and respond appropriately to emotional reactions resulting from traumatic incidents, and to support supervisors and managers in this process. A culture which encourages help-seeking and open dialogue surrounding mental health, and discourages stigma is pivotal to bolster mental health recovery. The potential of certain organisational initiatives in achieving this aim could be further investigated.

Keywords: Qualitative research, mental health, emergency responders, thematic synthesis, psychological trauma

Article Summary- Strengths and limitations of the study

- This is the first review to qualitatively synthesise the barriers and facilitators to help-seeking in the emergency services, and frontline staff's experiences of mental health recovery following traumatic incident exposure.
- Correspondence with key stakeholders in UK ambulance management helped to ensure the aims of this comprehensive
 qualitative synthesis are relevant to address the challenge faced by mental ill health among emergency service workers.
- This review's implications for practice and research provide emergency service organisations with insight on how to reduce the mental strain experienced by trauma-exposed staff.
- Studies were not excluded on the basis of age or setting location, although the majority of included studies were published
 within the last 10 years, and were set in socioeconomically developed western countries.
- This review's findings offer implications for existing interventions within UK emergency service organisations.

Introduction

Emergency service workers (ESWs), also referred to as first responders, consistently experience poorer mental health outcomes when compared to the general population. While subtle differences exist between occupational groups within emergency service organisations (ESOs), ESWs experience disproportionately higher rates of post-traumatic stress disorder (PTSD), anxiety, depression and psychological distress. Exposure to traumatic events accounts for higher PTSD rates in the ESW cohort, and is the second greatest cause for poor mental health among UK ESWs, following excessive workload. This review will consider a 'critical incident' as: 'any event with sufficient impact to produce significant emotional reactions in people now or later', as described by Mitchell and Everly. Suicide attempts by ESWs are considerably more prevalent than the estimated rate of 0.5% in the general population. PTSD is a risk factor for suicidal ideation and risky behaviours in civilian and military populations, and increases suicidal risk in ESWs. Mental ill health among ESWs is associated with high rates of absenteeism and presenteeism, resulting in significant costs to emergency service organizations.

Trauma Risk Management (TRiM) is a peer support system in use across many UK ESOs, delivered by trained volunteers belonging to the organisation, ¹³ who psychologically risk assess individuals exposed to traumatic events for psychological risk. ^{14,15} The evidence surrounding TRiM's impact on users' mental health outcomes or positively altering mental health stigma is inconclusive. ¹⁵⁻¹⁸ Schwartz rounds are a 'cultural change initiative' which allow multidisciplinary healthcare staff to share and discuss 'non-clinical aspects (e.g. psychosocial, ethical and emotional issues), ²⁰ and as of May 2020 have been adopted by four UK ambulance trusts. ¹⁹ Schwartz rounds are reported to improve staff psychological wellbeing and increase 'empathy and compassion for colleagues', ²¹ although have not been formally evaluated. Other interventions provided by UK ESOs to support the emotional wellbeing of ESWs after attending to critical incidents include counselling and 24-hour helplines, ²²⁻²⁶ 'defusing' programmes²⁷ and peer support networks. ²⁸

Despite the availability of interventions, ESWs experience barriers to mental health care with one third experiencing mental health stigma, a rate that is higher than the general population.²⁹ The purpose of this review is to identify the factors associated with mental health recovery of ESWs experiencing distress linked to critical incidents. This review will also identify the barriers to and facilitators of mental health help-seeking behaviour among psychologically distressed ESWs. Our findings and implications will assist UK ambulance trusts in designing national guidelines for psychological support for their staff following traumatic incident exposure by identifying important contextual factors which help and hinder staff when they access support while illuminating benefits and disbenefits of current organisational interventions. This review was initiated in collaboration with key ambulance management stakeholders who expressed a need for research to guide decisions about wellbeing interventions for frontline staff, therefore the focus is on ambulance trusts, although the findings will also be of relevance to fire and police organisations.

Methods

Methodology

The interpretive review technique method of thematic synthesis, as described by Thomas and Harden, was used to conduct this qualitative review.³⁰ This inductive synthesis technique is focussed around: intervention need, appropriateness, acceptability and effectiveness,³¹ and is an established method in the field of mental health to investigate barriers to help-seeking, and to synthesise qualitative evidence about participant experiences.^{29,32,33} It is therefore appropriate given that this review's purpose is to inform UK emergency service organisational guidelines. The research question and final search terms were ratified by a consensus panel of key stakeholders drawn from UK ambulance services. This group contributed to the development and refinement of the review questions, search parameters and application of the review findings. The methods of this review are reported using the ENTREQ framework (Supplementary File 2).

Inclusion criteria

(* indicates further information below)

(1) Study participants were frontline ESWs*, volunteers were not included; (2) There is a focus on work-related psychological distress*;

(3) Data collection includes primary qualitative interviews, focus groups or observational methods; (4) Analysis focussed around participant attitudes towards: a) behaviour aimed at improving mental health after experiencing a traumatic event OR b) factors which ESWs find helpful or unhelpful for their mental health while experiencing work-related psychological distress, are explored; (5) Published in English and peer-reviewed.

* Emergency service workers' (ESW) constitute of members of the emergency medical services (EMS), the fire service and the police force.^{2-4,8} The term 'psychological distress will be referred to according to Ridner's definition (see Appendix D).³⁴

Search strategy

Systematic searches of the following six databases were conducted between January and March 2020: OVID MEDLINE, EMBASE,
PsycINFO and SCOPUS. The first three databases were searched together using the MEDLINE database. In order to avoid duplicates,
the SCOPUS database was then searched with an additional filter to exclude MEDLINE results. One reviewer (NA) then applied the
eligibility criteria against the search results, initially screening the full text for obviously irrelevant studies. (Figure 1)

<<insert Figure 1 here>>

Figure 1: Based on the PRISMA flow diagram template. 35

To identify articles missed in the electronic database search, the following methods were also employed: 1) Using 'related article' feature (when available), 2) Searching the titles of included studies in google scholar for citation tracking purposes, 3) Manual searching of the references of relevant studies (reference mining).

Grey literature was searched during background research for context. Two combinations of search criteria (see appendix A) were entered into each database in order to locate relevant literature relating to help-seeking and mental health recovery.

Quality appraisal

One reviewer (NA) independently assessed study quality using the CASP qualitative checklist. 36 Studies scoring less than five were further appraised independently by one of three reviewers (RR, MB, JW) using five prompts recommended by Dixon-Woods et al. to identify

studies of an inadequate quality for inclusion in the review.³⁷ One study was removed during this approach.³⁸ In keeping with this approach, 'signal' (the relevance of papers to the review's aims) was prioritised over 'noise' (the inverse of methodological quality).³⁷

Data extraction

A customised data extraction template (See Appendix B) was created using qualitative data extraction guidance³⁹ and that of a similar review as a template.³³ In keeping with thematic synthesis approach,³⁰ first order constructs (direct participant quotations) as well as the author's interpretations were extracted, in separate sections, to allow for a more comprehensive review.³⁹

Data synthesis:

Following Thomas and Harden,³⁰ all data relevant to the research aims were extracted onto templates, which then underwent line-by-line open coding. This approach allows new codes to emerge from the data, rather than imposing a pre-existing framework onto the extracted data. Subsequently, first-level codes were assimilated according to their meanings, similarities and differences. The codes were then arranged in a 'hierarchical tree structure' during which some codes were renamed as new meanings were generated. This process results in 'descriptive themes'. To enhance transparency, primary quotations used to construct the themes are supplied in Appendix C. In the final stage of thematic synthesis, the descriptive themes were used to address the review questions. This process involves 'inferring' the meaning behind the data; The final result of this process was the translation of the descriptive themes into implications for ESO wellbeing policy practice.

Results

Overview of study characteristics

24 studies were included in this review (see Table 1). All but two of these studies ^{40,41} employed qualitative methodology only. For these two studies, only data from sections related to their qualitative methodology were extracted. The majority of studies (16 of 24) employed a sample of ambulance personnel ⁴⁰⁻⁵⁵ followed by police officers ⁵⁶⁻⁵⁹ and lastly firefighters. ^{60,61} The study participants of one study, in addition to ESWs, included participants who did not match the selection criteria ⁶⁰, and two studies included a mix of different types of ESWs. ^{62,63} These studies were still eligible as the participant quotations were labelled with an occupational identifier to make it possible to differentiate between eligible and non-eligible participants. The objectives of studies varied widely in studies in terms of

relevance to this review's aims. Ten of the 24 studies included data relevant to post-traumatic incident mental health recovery, 41-43,45-48,51,55,63 and one study included data relevant to barriers and facilitators to mental health help-seeking. 62 The remaining 13 studies 40,44, 49,50,52-54,56-61 included data which was extracted for both of these outcomes.

Study quality:

Study quality varied significantly, with data collection, data analysis and discussion of findings being adequately explained in the majority of studies. All studies provided adequate research aims, although fewer than half sufficiently justified the research design. 41,43,45,49,50,55,56,57,59,61,62, The lowest scoring domains were recruitment and demonstrating reflexivity. In few studies the researchers adequately justified their selection of participants 41,45,47,57,62,63 or critically examined their relationship with participants. 46,48,52,53,56,62,63 Four studies failed to present any ethical considerations. 40,41,54,60

The full CASP appraisal table of all included studies is provided in online supplementary file 1. Following CASP appraisal, six studies 38,45,47,51,54,60 initially identified as weaker quality underwent further independent quality appraisal by one of three reviewers (RR, MB, JW), during which process one study was excluded. 38

This qualitative review identified 14 descriptive themes, which are arranged in groups of higher order themes. In turn, these are grouped into one of the following two thematic domains: 'factors contributing to mental health recovery after traumatic incident exposure' or 'factors influencing mental health help-seeking behaviour'. Table 2 presents a summary of hierarchical thematic structure.

Study characteristics (Table 1)

<<insert Table 1 here>>

Summary of Themes (Table 2)

<<insert Table 2 here>>

1. Factors contributing to mental health recovery

The following themes describe factors which participants attribute to having a direct influence on their mental health recovery after traumatic incident exposure.

Organisational

Three themes were identified as being directly linked with systems put in place by the organisations employing ESWs.

Time-out/Downtime period

A 'time-out' or 'downtime' period refers to a period of time following a stressful call in which ESWs are temporarily placed off duty, the availability of which was inconsistent across the studies. ESWs working in organisations in which they were offered downtime by their supervisors following certain calls reported that these breaks, ranging from 30 minutes to two hours, ^{43,46} were essential in order to allow them to 'decompress' in preparation for the remainder of the shift. ^{43,44} ESWs found particular comfort in casual conversation with their colleagues during this time, which did not necessarily relate to the previous call. ⁴³ During such discussion, humour could be employed by the group as a method of distraction and off-loading. ⁴⁹ While the majority of ESWs preferred to be in the company of colleagues during this time, ^{45,49,50,53} some individuals chose to make use of organisation-provided exercise equipment in order to de-stress. ⁵⁵

When time-out opportunities were unavailable, ESWs describe rushing into the next call without having psychologically processed the previous call. ⁴¹ In such circumstances, paramedics reported difficulty giving their full attention to the next call, limiting their ability to provide life-saving care. ⁵⁴ Contrary to the above findings, one ambulance worker preferred to be dispatched to another call immediately following a stressful call, due to the distraction this provided. ⁴³

<u>Supervisor</u>

ESWs have supervisors/line managers, whose roles include acting as a point of contact after a traumatic incident. In an ambulance

setting, paramedics were appreciative of the 'genuine concern' shown by their managers or supervisors following a traumatic call. 42

Concern was commonly expressed by asking paramedics how they were feeling, and providing them with an opportunity to talk. 42,43 Not all ESWs want to be approached by their supervisor immediately following the call, as illustrated by the following quote from a paramedic:

If don't want you to come up and get in my face and say, are you okay? Just leave me alone. Okay. Ask me in a couple of days, am I okay with the call, sort of thing.' 43

Occasionally supervisors were responsible for taking an ambulance crew off duty after a call.⁴³ Even if downtime opportunities were available upon individual request, paramedics described not making use of the opportunity unless suggested or requested by the supervisor.⁵⁰ Conversely, a supervisor's influence may also dissuade paramedics from requesting temporary downtime, especially for newer paramedics who were fearful of any repercussions linked to the perceived inability to cope.⁵⁰

Paramedics described unsupportive supervisor responses, such as not recognising the traumatising effect of an incident, applying disciplinary pressure after complicated calls, ⁴¹ or showing a lack of concern for paramedics' mental wellbeing. ^{43,52}

Official peer support network

The majority of ambulance nurses taking part in one study were in favour of the existence of peer supporters within their organisation; who the nurses described as being able to 'understand', due to their common experiences.⁵¹ Despite the apparent popularity of the service in this organisation, peer support networks in other organisations were rarely used, ^{49,54} with defusing occurring 'naturally within the halls' instead.⁴⁹ Participants in two studies expressed a hesitancy to make use of peer support opportunities for fear of being judged by colleagues as 'weak'.^{51,54} Other concerns centred around the competence of peer supporters, their ability to maintain confidentliality,^{51,54} and fear of overwhelming the colleagues delivering the support.⁵¹

Informal support

In contrast to organisational factors, these three themes describe how informal social factors influence ESWs' mental health recovery.

Colleagues and family

ESWs reported that they found it useful to talk with someone in an informal manner. ^{43,44,45,47,49,50,51,53,54,56,58,60,61}One firefighter described a need to 'vent a backpack', which fills up after each call, ⁶¹ suppression could be harmful in the long term as mental health conditions remain unrecognised. ⁵⁸ The main providers of such informal support were family members and work colleagues, but there were mixed findings in terms of preferences for support.

Many ESWs reported turning to their family members as a primary source of emotional support following difficult calls,

56,43,62,40,46,60,49 who were capable of 'selfless listening' without offering judgement, 56 and with whom ESWs feel more comfortable

sharing emotional vulnerability with family members than with colleagues. 43,56 However, a number of ESWs reported avoiding talking to

their family members about stressful calls out of a wish to protect them from the trauma they experienced, 46,48,49,56,60-62 although this

did not apply to family members with a first responder/healthcare background, who were judged to be able to 'understand' ESWs'

traumatic experiences. 47-49 For similar reasons, ESWs were willing to talk to certain colleagues about traumatic calls; The informal

sharing of vulnerability was reserved for colleagues with whom ESWs shared a bond of trust 47,48,53,56 and for those more likely to

empathise and understand the emotional impact of the event. 40,43,45-48 Sharing experiences with trusted colleagues provided an

opportunity for reflection and to hear different interpretations of the event. The risks of disclosure included reliving distressing events, and

potential having feelings invalidated when partners felt differently about the event. 48

Regular partner

ESWs described how having a regular work partner helped their ability to process traumatic events encountered on the job. \$^{41,43,53,62}A\$ trusting relationship between partners facilitated comfortable sharing of vulnerability following traumatic calls. \$^{43,53}\$ Having shared the experience, partners could emotionally support colleagues by allowing them to talk about the call and provide reassurance. \$^{41,62}\$ Having a regular partner could however be a negative influence in the case of an unsympathetic relationship, such as partners who respond insensitively to any disclosure of vulnerability. \$^{53}\$ Due to the potential stigma arising from the disclosure of vulnerability within earshot of colleagues, the process of 'defusing' between partners, following a call, commonly takes place within the private space of the ambulance, when returning to base and while awaiting the next call. \$^{53}\$

Reassurance and validation

Reassurance, provided by colleagues indicating that they would have acted in the same way 42,44,48 or by receiving praise for their actions from their supervisor, 43 were valued by ESWs following traumatic incidents, especially those involving fatalities. 43 Reviewing the technical

aspects of calls with other ESWs provided reassurance that the 'final outcome' was unavoidable. ⁶¹ In cases of suicide, learning about the preceding circumstances could provide closure for some ESWs. ⁴³ Following fatal accidents, paramedics also described needing to visit family members in hospital, or to attend funerals. ⁴²

2. Factors influencing help-seeking behaviour

The following themes reflect the barriers and facilitators to help-seeking.

Nature of intervention delivery

Mandatory vs non-mandatory

The decision to employ optional or mandatory organisational mental health support for ESWs following traumatic calls was raised in several of the studies and often depended on the timing of delivery following the incident. Some participants resisted mandatory organisational mental health support following traumatic calls; police officers expressed a need to 'feel in control of the decision to talk' due to the stigma surrounding any disclosure of vulnerability. Mandatory interventions for ESWs before they are ready to talk could lead to a rejection of the intervention, 43,50 as illustrated by the following paramedic quote:

'My emotions are none of your business and if I wanted to share my emotions with you, I'm going to share [them] with someone I trust...'50

Others however believed mandatory interventions would reduce stigma associated with their use, ^{56,50} and prevent delays to help-seeking due to the stigma associated with disclosing vulnerability. ⁴³ Police officers who were initially reluctant to participate felt 'calmer' and expressed gratitude after attending a mandatory counselling service. ⁵⁶ EMS staff in one study suggested limiting mandatory support to certain types of incident, such as those involving children. ⁴³

Shared experiences with intervention provider

Therapists with a background in the emergency services or the military, or trained peers, were preferred by ESWs, ⁶² because of the belief that they are more likely to 'understand' their problems and experiences. ⁵⁰ This finding was observed across the emergency services:

'Many [participants] also approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member.'62

Stigma as a help-seeking barrier

'Macho' culture

Stigma associated with the disclosure of emotional vulnerability related to traumatic calls, and mental health issues. 40,43,44,49,50,52,53,54,56,58,60 was identified across the emergency services. A 'macho' attitude and culture acted as a key barrier to disclosure where there was an expectation to 'deal with it'. 53,58 Disclosure of vulnerability in such a culture was perceived as a weakness and responders were viewed as unable to cope with the demands of the job as first responder. 43,49,50,53,56,59,60 Revealing one's feelings was perceived to be emasculating and prevented ESWs from talking about their feelings and seeking support, 50,56,60 as demonstrated by this quote from a police officer:

'I think there's a real element of machismo and masculinity in the police force and it's a bit, sort of a faux pas to admit that things have really affected you ... If I'd have come out and said "ah you know, that really affected me badly, let's go and sit down and have a cup of tea and talk about it" I think you're straying into pink and fluffy territory there ... saying 'that made me feel sad' is a bit too far'. 56

Stigmatising attitudes held by senior organisational members were influential as they prevented ESWs from contacting their supervisors to seek support. 56,59 Discussing stress in this culture was described as 'taboo' 54 so ESWs reported often avoiding asking their colleagues about their emotions following traumatic calls; 50,52 police officers described how 'tough' colleagues working in such a culture have died by

suicide. 58 Some organisations described a contrasting culture in which openness about emotional vulnerability was regarded as a strength. 61

Two studies identified a connection between elements of the 'macho' culture described, and the gender of ESWs. Swedish ambulance nurses reported that organisations where there was a higher proportion of women fostered a culture of openness with respect to sharing vulnerability. ⁴⁰ Of a small sample of seven paramedics, Clompus et al. noted that female participants were more likely to have made use of formal mental health support mechanisms. ⁴⁹ The authors attribute this to 'masculinised paramedic culture'. ⁴⁹

Stigma and shame

This review identified that the fear of being shamed by being labelled as 'malingerers' or 'the lazy and the lame' resulted in presenteeism when officers remained on active duty although mentally unwell. Another aspect of mental health stigma is the belief that affected individuals are less competent in their responsibilities as an ESW, as well as being unreliable. Police officers described a common belief that 'you're on your own' working a shift with a colleague who has been open about the emotional impact of traumatic calls. ESWs who have been open about their mental health diagnoses describe being labelled as 'mad' or a 'crazy guy' Such attitudes may result in shame and the avoidance of help-seeking.

Career concerns

Four studies report that police officers delay help-seeking for mental illness due to concerns about the perceived impact of disclosure on their careers ⁵⁶⁻⁵⁹ Officers believed that being labelled with a mental health condition would obstruct career progression. ⁵⁷⁻⁵⁹ Officers feared being removed from 'public-facing operational roles', and/or feared a reduction in pay which related to being removed from frontline duities. ⁵⁸ Fear of involuntary dismissal due to disclosure and help-seeking was also reported by study participants from the fire service. ⁶⁰

Confidentiality concerns

Concerns regarding confidentiality were a barrier for ESWs to formal and informal help-seeking behaviour. Formal support services were

viewed with suspicion by police officers ⁵⁷ while other officers felt they might be monitored or labelled as 'weak' if they sought referral to wellbeing services. ⁵⁶ Concerns about confidentiality were also raised by firefighters, who therefore requested preference for an anonymous counselling service outside of the brigade. ⁶⁰ In the emergency medical services, EMTs expressed concerns about loss of confidentiality through the organisation–provided peer support network; ⁵⁴ similar concerns were expressed by EMTs towards critical incident stress debriefing (CISD). ⁵⁵ There are also perceived risks of confidentiality breaches in informal settings, as described by one paramedic:

I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judged as weak or you might get fired.' 62

Confidentiality concerns could also indirectly influence help-seeking; ambulance supervisors wishing to put their crew on a time-out after a traumatic call can be dissuaded by knowing this information could become public knowledge among the dispatchers.⁴³

Mental health literacy

Emotional awareness

Participants and authors of the included studies recognised a need for more training and education about mental health related issues for ESWs and family members and supervisors, who may be in a better position to detect behavioural changes and therefore facilitate help-seeking. ^{42,43,54,62} Such education should focus on increasing ESWs' ability to detect emotional changes within themselves, which could facilitate help-seeking behaviour. ^{42,54,54,57,62} ESWs expressed a desire to be informed about the types of emotions which could be triggered by work-related traumatic incidents, ^{42,54} which may reduce shame associated with help-seeking. ⁶² Studies revealed that an inability to recognise milder mental health symptoms acted as a barrier to help-seeking, with participants writing them off as being 'grumpy', ⁵⁸ and not recognising and admitting to emotional distress. ⁴² Additionally, participants were sometimes unaware of the support services available to them, ^{53,57,62} and were unaware of the benefits of seeking help. ⁶²

Education and Stigma

While stigma may indirectly change through improving general mental health awareness, authors also emphasised the value of education to reduce organisational stigma. ⁴³ ESWs recommend such education to be delivered regularly in 'brief and efficient' classes of small groups by a peer from outside of the organisation. ⁶² Having an awareness of work-related mental health problems among colleagues appeared to be an important facilitator of help-seeking. ^{59,62} Experienced ESWs were regarded as being influential by giving permission to other responders to 'open up'. ⁶¹ Police officers in one organisation therefore advocated for mental health 'champions'; colleagues, preferably leaders, who could model vulnerability by openly disclosing their mental illness and work-related distress. ⁵⁹

Discussion

This review synthesised 24 primary studies investigating ESW attitudes to help-seeking and mental health recovery following trauma exposure. The synthesis generated 14 themes relating to 'factors contributing to mental health recovery after traumatic incident exposure' and 'factors influencing mental health help-seeking behaviour'.

Help-seeking: culture/stigma

The findings of this review support quantitative findings that the fear of a breach in confidentiality in attending mental health services, and the concerns about negative career repercussions, pose significant stigma-related barriers to help-seeking for ESWs.²⁹ This is important as any delays in help-seeking can compound or exacerbate mental ill health.^{64,65} Concerns raised by ESW responders about the impact of mental health disclosure on career progression, professional identity and competence have also been found in military personnel.^{29,33,66,67}

Masculinised social norms, similar to those identified by this review as existing in ESOs, have been described in the military, ^{15,67} which is male dominated with high rates of mental health stigma.²⁹ There are, however, many other similarities between the two settings which are likely to be influential, such as 'norms and values that place a premium on self-reliance in the face of obstacles'.²⁹ Occupations dominated by hyper-masculine stereotypes may also disadvantage men who do not identify with these values, therefore discouraging the very demographic who would challenge them.⁶⁸ Recruiting a more diverse, emotionally literate and aware workforce, with more women may challenge macho work cultures which prevent ESWs from disclosing their vulnerability.⁶⁸

This review's finding of anticipated stigma acting as a help-seeking barrier, is supported by the findings from a systematic review which found that 'stigma can potentially lead to delayed presentation in mental health care' for ESWs, ²⁹ and as well as negatively influencing help-seeking in civilian populations. ⁶⁶ These findings have also been demonstrated in a qualitative review of a military setting. ³³

The findings of this review in terms of attitudes to mental ill health are consistent with Goffman who argued that stigma is defined in and enacted through socially constructed 'norms'. The 'norms' of what is stigmatising and what isn't are socially constructed within a large variety of contexts and has the potential to 'shift'.⁶⁹ An effective way of challenging stigma associated with mental illness and changing negative perceptions is through a strategy of increasing contact.^{15,70–72} In order to effectively counter stigmatising attitudes towards mental health, contact should be delivered in the context of the following five factors:⁷² equal status, the opportunity for individuals to get to know each other, information which challenges negative stereotypes, active co-operation and pursuit of a mutual goal. Such approaches and factors could be employed to tackle the stigma and culture which prevent ESWs from seeking help. Elements of these factors can be recognised in organisational strategies such as Mental Health Champions and Schwartz rounds (see below).

Help-seeking: Education

This review identifies a demand for improving the mental health literacy of ESWs and describes the type of education ESWs believe would be appropriate. Mental health education has been shown to be effective at changing attitudes towards mental health disorders when aimed at large populations, smaller at-risk groups or at the individual level. Anti-stigma education was introduced in UK emergency services as part of the 'Blue Light Programme', and demonstrated that achieving anti-stigma change at the employee level requires sustained education efforts over a number of years.

The literature suggests that certain types of events, such as paediatric fatalities, events involving multiple casualties or suicides, have a higher traumatising potential than others. 40,60,75 The evidence suggests however that the process of traumatisation among ESWs is highly individual, relating to 'personal history, situation, and perspective' of the exposed individual, 55 and ESWs can experience trauma in different ways depending on how they contextualise the victim. 40 Questionnaires taking into account individual factors, such as the ESW's 'state of mind' preceding the event, are therefore a useful resource for predicting peritraumatic distress in exposed individuals. 76

Mental health recovery: Social support and downtime

Review participants identified the importance of social support following exposure to traumatic incidents, in consistence with the wider literature. ^{17,33,77,79} Downtime was positively valued by ESWs who had experienced it, yet is not commonly granted to ESWs in practice. ^{79,80} The types of mental health outcome affected by post-incident downtime and extent of its influence is disputed. Carlier et al. identified 'insufficient time allowed by the employer to resolve the trauma' was correlated with higher PTSD scores in police officers three months post-trauma, but not at 12 months. ⁸¹ Having insufficient recovery time following traumatic calls has been correlated with higher emotional exhaustion ⁸⁰ and psychological distress. ⁸²These results are in contrast with the findings of a cross-sectional quantitative survey of the psychological consequences of downtime in 217 ambulance workers, which revealed increasing periods of downtime, up to and including one day, to be significantly associated with lower depression scores, but not with symptoms of 'post-traumatic stress, burnout and stress-related physical symptoms'. ⁸³

Application of review findings to organisational interventions, policy and research

Our findings have implications for three organisational interventions which are in use or available for use within the emergency service organisations. These interventions have particular relevance in the context of this review due to their shared potential to alter organisational mental health stigma, which this review identified as a barrier to help-seeking.

1) Trauma risk management (TRiM)

Consistent with qualitative findings of navy personnel regarding the implementation of TRiM, ⁸⁴ this review identified a perception among ESWs that peer-support programs are relevant and suitable for their needs, as well as concerns regarding confidentiality and competence of practitioners of peer support programs. Peer supporters are not however regarded as possessing the same professional competence/credibility of a professional mental health professional. Of note, while review participants expressed concerns about being judged for being perceived as 'weak' by peers in a peer-support system, such a concern was not detected among naval officers towards TRiM, ⁸⁴ despite widespread stigma towards help-seeking and mental health issues which exists in the military. ³³

2) Mental Health Champions

This review identified that awareness of colleagues' mental health challenges could be an important facilitator for help-seeking. The 'Blue light champions' role⁸⁵ therefore appears to be a potentially effective method of improving attitudes, although quantitative evaluation linking these roles with ESW mental health outcomes and culture change is lacking. Staff satisfaction surveys of these roles reveal a lack of support from management and not having sufficient time available to dedicate to the role.⁸⁶

3) Schwartz Rounds

In terms of challenging organisational culture which prohibits help-seeking due to stigma, Schwartz Rounds offer staff the opportunity to disclose their vulnerability whilst fostering a connectedness to other staff. However, Schwartz Rounds have not been evaluated and it is unclear whether they reduce stigma, facilitate help-seeking behaviour, or alter mental health outcomes. Quantitative evidence describing the effectiveness of Schwartz on the above outcomes would be useful.

Implications for policy

Following traumatic calls, ESWs will likely benefit from having a period of mental recovery time during which they can access informal support from their colleagues. ESOs should be aware of the therapeutic effects of informal support in this post-incident setting, and facilitate its availability. It should be considered that despite recognising its value, ESWs are unlikely to request downtime themselves, instead relying on it being imposed/offered by supervisors. It may also be useful for supervisors to consider that the manner in which they approach ESWs for welfare concerns, as demonstrated by this review, in addition to their overall attitude regarding mental health, have significant implications for the help-seeking behaviours of ESWs. It may be important to consider that ESWs report trusting professional relationships, such as regular work-partners, as being psychologically protective against occupational trauma experiences, providing vulnerability can be comfortably shared. ESWs may benefit from education enhancing their ability to recognise pathological emotional changes secondary to traumatic

incident exposure both in themselves and colleagues, and to able to appreciate when it is appropriate to access formal organisational resources and the potential benefit of different types of interventions for distressed ESWs. Additionally, communicating to ESWs that the objective characteristics of an event cannot invalidate their experience of being traumatised, could enhance help-seeking by normalising symptoms of mental ill health. ESOs may wish to consider that mental health champion-type roles, providing staff in such roles are adequately supported, are regarded by ESWs as valuable tools for challenging mental health stigma. This review's findings may provide insights into how engagement between ESWs and official peer support networks can be improved, by focussing on cultural anti-stigma change and by targeting specific barriers to engagement as identified in the results section. Quick fix solutions to the cultural change necessary to increase help-seeking in ESOs should not be prioritised over meaningful sustained efforts to improve mental health literacy.

Conclusion

The barriers and facilitators to help-seeking identified by this review may assist emergency medical organisations in improving engagement amongst their staff with organisational wellbeing interventions. Findings related to the experiences and attitudes of staff regarding mental health recovery should be considered when implementing occupational support programmes.

Footnotes

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advice, quality appraisal by independently appraising lower CASP scoring studies, and final approval of the version to be published. All authors have approved the final version of the paper ahead of publication.

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Appendix A: Literature search terms

emet] 2
__hampions

grand 1 (Part 2), linte,
__dia-a/4864/strand-1-p.

-ecover* OR PTSD OR po
__event) OR experience
____nder* OR ambu'
_____niterview* / (((mental AND (health OR well?being)) OR (trauma* OR *stress OR recover* OR PTSD OR post?traumatic?stress OR emotion* OR (critical AND incident) OR (traumatic AND incident) OR (traumatic AND event) OR experience* OR support* OR *support) AND (emergency service* OR emergency medical service* OR EMS OR first responder* OR ambulanc* OR paramedic* OR firefighter* OR fire service* fire department* OR police*) AND (qual* OR mixed?method* OR interview* OR focus?group*) NOT (quality OR emergency?department)

((emergency service* OR emergency medical service* OR EMS OR first responder* OR ambulanc* OR paramedic* OR firefighter* OR fire service* fire department* OR police*) AND (qual* OR mixed?method* OR interview* OR focus?group*) NOT (quality OR emergency?department)) AND ((help-seeking* OR stigma* OR mental* OR barriers OR (MeSH terms: help-seeking behaviour, social stigma, mental health, psychiatry, social support, mental disorders))

Appendix B: Data extraction template

Citation

Reviewer

Country

Aims

Ethics - how ethical issues were addressed

Study setting- e.g. type of organisation

Relevant context to study setting

Socio-demographics of the country / region

Recruitment context (e.g. where people were recruited from)

mplate Sampling- what sampling methods, what were inclusion and exclusion criteria,

Data quality rating

Participants- 'population described'

Participants- 'characteristics'- age, sex etc

Theoretical background

Proportion of sample exposed to critical incidents/ definition of critical incident/ anything relevant to the study matching my selection criteria

Definition of critical incidents/ something related

Data collection methods- data collection methods, role of researcher within setting...

Data analysis approach- how many researchers, how did they code, how were findings corroborated,

Themes identified in study (1st order interpretations)- Help-seeking

Themes identified in study (1 $^{\rm st}$ order interpretations) — Mental Health recovery

Data extracts related to key themes- Help-seeking

Data extracts related to key themes- Mental health recovery

Author explanation/interpretation of key themes (2^{nd}) order interpretations) – Help-seeking

Author explanation/interpretation of key themes (2^{nd}) order interpretations)- Mental health recovery

Recommendations made by authors (both outcomes; but specify)

Third order interpretations:

Other potentially relevant information

Appendix C: Example literature quotations used to construct themes

Factors	Organisa	Time	They prefer support to be offered immediately after the call and find that downtime after a stressful call allows
contribut	tional	out/Downtime	them to decompress and prepare for the rest of their shift: 'we knew we weren't going to get a call right, so
	lionai	Out/ Downtline	we knew we had the two hours, so we watched a funny show and had a napButlike for me personally
ing to			that's exactlywhat I needed.' Participant 4 from focus group 4. Douglas et al. 2013
mental			and o statedymmat i needed i and pain i nom rocket group in Dougast et all 2010
health			our supervisor took us out of service for a couple of hours and let us go have lunch, sat down and had
recovery			lunch and just kind of relax and talk amongst ourselves, not even about the call, just about whatever, just to
post			kind of relax. Before we went back on shift. Certainly we could have booked off the rest of the day, you know,
traumati			on stress leave or whatever, but we all, found that just having, just being able to have a couple of hours to,
С			
incident			kind of, you know, relax a little bit, that helps us a lot.' (Focus group #520–522)
exposure			Halpern et al. 2008
chrosure			
			I like didn't want to be like I need to take a couple of hours off because I did not want to look bad in front of
			the supervisor.—Participant 2 from focus group 2.
			Douglas et al. 2013
			Unfortunately, paramedics often do not have adequate time to talk. Several participants expressed their
			frustration over 'calls waiting'. These calls are waiting to be dispatched as no crew is available. When BCEHS
			paramedics offload their patient(s) at the hospital, dispatch can immediately send them to a waiting call. This
			can limit paramedics' ability to discuss CIs. James desired:
			to be given the time uninterrupted, unbothered Give us our time to decompress.
			Drewitz-Chesney et al. 2019
		Supervisor	Depending on who it is one supervisor, we took, we did a [critical call], and we took the last hour of the
			shift off. And he was making us fill out all these forms and, you know, telling us that if we wanted to take the
			shift off. And he was making us fill out all these forms and, you know, telling us that if we wanted to take the next shift off that we had to go see our doctor and get a note for this and that. And you know, just made it
			next shift off that we had to go see our doctor and get a note for this and that. And you know, just made it
			next shift off that we had to go see our doctor and get a note for this and that. And you know, just made it more stress-(Focus group #520–522)
			next shift off that we had to go see our doctor and get a note for this and that. And you know, just made it more stress-(Focus group #520–522) Halpern et al. 2008
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	I	I
	Peer support	Nurse 1 "Therefore, talking to a person who has the same skills, abilities and knowledge you have would
	network	probably be more meaningful".
		Carvello et al. 2019
		The majority of nurses is in favour of peer-supporters. The motivation is based on the fact that they recognise
		the peer-support as someone that can understand what nurses really mean when relating a traumatic event,
		being one of their colleagues. Carvello et al. 2019
Informal	Colleagues	The more you talk about something, the more it becomes something you've told and your telling becomes part
support	and family	of the memory, as opposed to it being a really shiny, vivid thing inside your head*those images.
		Evans et al. 2013
		I don't think tolling about it to more at your is the veloce the second income it's more in a soule who
		I don't think talking about it to people at work is the release, the escape I need it's speaking to people who I care about and who care for me and just having that comfort zone, that's what's important to me. [P16]
		Evans et al. 2013
		Evals et al. 2010
		I never tell my wife that, I would never tell her
		that because I just think that would have really put
		the frighteners on her. [P15]
		Evans et al. 2013
		`^
	Regular	For me it's just always been that partner, because they're right there with you and they'll know what's going
	partner	on, and you really want somebody that can understand what's happening.
		Jessica et al. 2009
		for the confirmation of the theory was also produced as the confirmation of the confir
		for those of us that have regular partners, regular stations, rely on your partner They're gonna know if something's up with you.
		Drewitz-Chesney et al. 2019
		Stories Glosticy of all BO15
		Paramedics working with different partners may be unable to recognise changes as readily as they would in a
		regular partner. When paramedics are without a regular partner or are uncomfortable speaking with their
		current partner, they often don't discuss calls. Instead, some participants said they speak with long-time
		paramedic friends or coworkers with whom they have similarities, ie. age or training level.
		Drewitz-Chesney et al. 2019
		if I'm working with my regular partner, those communication lines are very, very open and we can talk about the tough calls, how we're feeling, if there's anything we would have done different [sic] (Sean).
		Drewitz-Chesney et al. 2019
		I really envy the paramedics that have regular partners that they know, and they trust, and they can talk to
		(Krista).
		Drewitz-Chesney et al. 2019
		I would have a regular partner and that partner would be someone who is just like family to me. We would
		just talk about everything, without even hesitating'
		Drewitz-Chesney et al. 2019
	Reassurance	I remember going to the hospital and I remember I was disappointed because the parents weren't
	and validation	there at that timeAnd I don't know what it was. It was just something that made me feel like I just
		needed to talk to them. But I never ended up talking to them. So anyway that call definitely stands out as
		being(Stuck with you.) Yeah.
		Halpern et al. 2009

Factors influenci of intervent ion delivery The seeking behaviou r Shared experiences with intervention provider Shared experiences with intervention provider Shared experiences with intervention provider Factors influenci of intervent ion delivery Mandatory vs non- mandatory ion delivery We had counselling every six months and everybody used to go 'Oh I've got to see the counsellor this week', but I tell you what we all quite enjoyed it I was so much calmer after speaking to her but it's something I'd never have done had I not been made to do it. [P12] Evans et al. 2013 My emotions are none of your business and if I wanted to share my emotions with you, I'm going to share [them] with someone I trust Participant 1 from focus group 1. Douglas et al. 2013 FRs in our study preferred a MH professional with experience as an FR or military veteran. Many also approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member. Jones et al. 2020 I've been to [therapy] a couple of times The guy that I got was excellent, but I only think it was excellent because he was prior military (P8, Firefighter ×22 years). Jones et al. 2020 (study 4) someone I think understands what's going on, and has been through what I've done Participant 3 from				supervisor Whether it was talking specifi cally about the call or just having a little bit of a "hey you're okay
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			experiences with intervention	approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member. Jones et al. 2020 I've been to [therapy] a couple of times The guy that I got was excellent, but I only think it was excellent because he was prior military (P8, Firefighter ×22 years).
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			experiences with intervention	approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member. Jones et al. 2020 I've been to [therapy] a couple of times The guy that I got was excellent, but I only think it was excellent because he was prior military (P8, Firefighter ×22 years). Jones et al. 2020 (study 4)
focus group 4.			experiences with intervention	approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member. Jones et al. 2020 I've been to [therapy] a couple of times The guy that I got was excellent, but I only think it was excellent because he was prior military (P8, Firefighter ×22 years). Jones et al. 2020 (study 4) someone I think understands what's going on, and has been through what I've done Participant 3 from
Douglas et al. 2013			experiences with intervention	approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member. Jones et al. 2020 I've been to [therapy] a couple of times The guy that I got was excellent, but I only think it was excellent because he was prior military (P8, Firefighter ×22 years). Jones et al. 2020 (study 4) someone I think understands what's going on, and has been through what I've done Participant 3 from
			experiences with intervention	approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member. Jones et al. 2020 I've been to [therapy] a couple of times The guy that I got was excellent, but I only think it was excellent because he was prior military (P8, Firefighter ×22 years). Jones et al. 2020 (study 4) someone I think understands what's going on, and has been through what I've done Participant 3 from

Stigma as a help- seekingb arrier Specific	'Macho culture'	I think there's a real element of machismo and masculinity in the police force and it's a bit, sort of a faux pas to admit that things have really affected you If I'd have come out and said 'ah you know, that really affected me badly, let's go and sit down and have a cup of tea and talk about it' I think you're straying into pink and fluffy territory there saying 'that made me feel sad' is a bit too far. [P3] Evans et al. 2013
barriers		Everyone wants to be tough and strong. Maybe that was my downfall or problem at the time and I didn't want to admit that I needed any kind of help. I guess I didn't want to be perceived as weak. (Participant #110) Halpern et al. 2008
		that's so ridiculous. You need to harden up if you want to do this job, and old people die. Drewitz-Chesney et al. 2019
		in metro, there's a lot morebravado and joking around about thingsIf you can get one on one with someone, they're usually a lot more receptive and a lot more empathetic- (Dennis). Drewitz-Chesney et al. 2019
	9	Unfortunately there's a massive stigma [] one of my sergeants the other week, there was mental health training coming up and his reaction to being put forward to go on the training was, 'Well what do I want to go and learn how to deal with a load of nutcases for? Bullock et al. 2018
		We are many women at the station so its easier for us to talk about what happenedYou have to talk about what happened otherwise you can't go on. It's easier than on a station with only men, it's not necessary with any "macho style" so I think it's easier for the men (at our station) to talk about things you must talk about. (A female nurse describes her feelings.) Jonsson et al. 2003
	Stigma and shame	As an institution, they were very very good, in getting me better, at making me understand, but back at work that was a different ball game. You've got your colleagues who are still at work, still running around like idiots and they're like, oh fucking hell, you've had three months off, you know, I should have gone off with stress. (Participant 1). Edwards et al. 2020
		There have been officers that are doing the shift that have shown that they can't deal with situations like that, and been very open about it*and they haven't got the respect from the shift, because the colleagues go 'well, you're on your own if you're working with her, because she'd back away' or whatever. So you don't want to be considered as one of those. [P7] Evans et al. 2013
	Career concerns	I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judged as weak or you might get fired" (P2, EMT/paramedic ×20 years). Jones et al. 2020
		If you've a form of mental health illness you will not get on; you will not be promoted,people will not want you on their section. (Participant 4). Edwards et al. 2020
		I feel scared to declare anything or do anything about anything because will it bite me later on in life? Will it prevent me from doing something in the police later on? Could it be used against me? will it be used in a negative way later on? Bullock et al. 2018
		negative way later on?

	Confidentiality concerns	I know our department's very, very poor at keeping secrets. So if I put a crew out of service, I have to tell the communications center. Communications says, we're sitting this far apart, Hey X, I just put the 22 car out of
		service in stress. Every dispatcher in there hears it. Every call receiver in there hears it. So they hear it. I don't know if they say anything, I don't know if they go home and tell all their friends and family. But I don't like
		that system. There's no quiet way of doing it. (Participant #128)
		Halpern et al. 2008
		I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judge
		as weak or you might get fired" (P2, EMT/paramedic ×20 years). Jones et al. 2020
		to whom must I speak in the police if I can't trust anyone. So now I'm seeking professional help outside th
		police . Boshoff et al. 2015
Mental	Emotional	Some appreciated that difficulties in recognizing and admitting to distress pose significant barriers to accessing
health	awareness	support. Recognizing the emotional impact of critical incidents may help to address these barriers.
literacy		Halpern et al. 2009
		I didn't recognise it as what it was; I just thought I was grumpyyou don't see them creeping up, and in the
		end, the thing that tips you over the edge, the thing that makes your bottle overflow if you like can be
		something quite small because you've got used to dealing with stuff. (Participant 5).
		Edwards et al. 2020
	Education and	I think for, for everybody, is, here's my thought towards your process, is giving them the tools. People are
	stigma	going to be very tough and say, yeah, yeah, fine. But you know if you
		could somehow identify the emotions that go along with these calls that might be starting to put yo
		on tiltThen you can teach people to be aware of them and say, hey, you know what, it's okay to say, I need
		to talk to someone.
		Halpern et al. 2009
		In particular, it would appear from this study that teaching ambulance personnel about the emotional aspects
		surrounding different types of critical incident may diminish their confusion about which incidents they can
		expect to impact them.
		Halpern et al. 2009
		I guess that's the main two [barriers], pride and then denial But, it's just education. Just letting [FRs] know
		look, these things are normal. It's going to happen to somebody" (P11, Firefighter ×8.5 years).
		Jones et al. 2020
		Knowing that other people are there dealing with that same stuff. You can bounce ideas off each other, see
		what's worked in their situations and what hasn't you realize you're not crazy (P12, EMT/paramedic × 1
		years).
		Jones et al. 2020
		If you could actually get people in in front of officers saying, 'I was one of those people that didn't believe
		stress could ever get to that level and it was ridiculous and you just needed to work harder', maybe officers
		would accept that from another officer more than just somebody standing in front of you training because it's
		getting officers to accept that actually it's okay, you're only human and your body and your mind can only ta
		so much, and maybe they'd accept it more then.
		Bullock et al. 2018

Appendix D- Abbreviations and definitions

Appendix D- Abbreviations and definitions Meaning		
AbbreviationMeaningNHSNational Health ServicePTSDPost-Traumatic Stress DisorderESWEmergency Service WorkerESOEmergency Service OrganisationEMSEmergency Medical ServiceCISDCritical Incident Stress DebriefingUKUnited KindgdomTRIMTrauma Risk Management		
NHS National Health Service PTSD Post-Traumatic Stress Disorder ESW Emergency Service Worker ESO Emergency Service Organisation EMS Emergency Medical Service CISD Critical Incident Stress Debriefing UK United Kindgdom TRiM Trauma Risk Management	Appendix D- Abbreviations and definitions	
NHS National Health Service PTSD Post-Traumatic Stress Disorder ESW Emergency Service Worker ESO Emergency Service Organisation EMS Emergency Medical Service CISD Critical Incident Stress Debriefing UK United Kindgdom TRiM Trauma Risk Management	Abbreviation	Meaning
PTSD Post-Traumatic Stress Disorder ESW Emergency Service Worker ESO Emergency Service Organisation EMS Emergency Medical Service CISD Critical Incident Stress Debriefing UK United Kindgdom TRiM Trauma Risk Management	NHS	
ESO Emergency Service Organisation EMS Emergency Medical Service CISD Critical Incident Stress Debriefing UK United Kindgdom TRiM Trauma Risk Management	PTSD	
ESO Emergency Service Organisation EMS Emergency Medical Service CISD Critical Incident Stress Debriefing UK United Kindgdom TRiM Trauma Risk Management	ESW	Emergency Service Worker
EMS Emergency Medical Service CISD Critical Incident Stress Debriefing UK United Kindgdom TRiM Trauma Risk Management	ESO	
CISD Critical Incident Stress Debriefing UK United Kindgdom TRiM Trauma Risk Management	EMS	
UK United Kindgdom TRiM Trauma Risk Management	CISD	
TRiM Trauma Risk Management		
RTA Reciprocal Translocation Analysis	RTA	Reciprocal Translocation Analysis
CASP Critical Appraisal Skills Programme		
EMT Emergency Medical Technician		

Term	Definition
Psychological distress	'the unique discomforting, emotional state experienced by an individual
	in response to a specific stressor or demand that results in harm, either
	temporary or permanent, to the person'7
Critical incident	'any event with sufficient impact to produce significant emotional
	reactions in people now or later'.9

Type of stigma	Definition
Anticipated stigma (Perceived stigma)	'the extent to which people believe they personally will be viewed or treated in
Anticipated stigma (referred stigma)	a stigmatizing way if their mental health problem or related help-seeking
	becomes known'
	Sharp M, Fear NT, Rona RJ, Wessely S, Greenberg N, Jones N, et al. Stigma as a Barrier to Seeking Health Care
	Among Military Personnel With Mental Health Problems. Epidemiol Rev 2015 /01/01;37(1):144-162.
Treatment stigma	'the stigma associated with seeking or receiving treatment for mental ill health'
	Clement S, Schauman O, Graham T, Maggioni F, Evans-Lacko S, Bezborodovs N, et al. What is the
	impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. Psychological Medicine 2015 /01;45(1):11-27.
Internalized stigma	'holding stigmatizing views about oneself'
	Clement S, Schauman O, Graham T, Maggioni F, Evans-Lacko S, Bezborodovs N, et al. What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative
	and qualitative studies. Psychological Medicine 2015 /01;45(1):11-27.
Public stigma	'invalidating and unjustified beliefs (i.e., prejudices and endorsed stereotypes)
	about others' Dickstein BD, Vogt DS, Handa S, Litz BT. Targeting Self-Stigma in Returning Military Personnel
	and Veterans: A Review of Intervention Strategies. Military Psychology 2010 April

Figures, tables and supplementary files for manuscript

and Meta-Analyses flowchart describing the pr.

.e 1: CASP appraisal table

(pi//bm)open.bm).com/ on April 10, 20, Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses flowchart describing the process of study selection.

Table 1: Table of study characteristics

Table 2: Summary of themes

Online Supplementary File 1: CASP appraisal table

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Table 1:

Title of study	Quality	Participants	Study aim(s)	Country	Method of data	Analysis method
(Authors, year)	ranking				collection	
	against					
	CASP					
	criteria				\bigcirc	
What makes an	5	N=60	To characterize	Canada	Focus groups/	Ethnographic
incident critical		4 supervisors,	critical incidents as		individual	content analysis
for ambulance		54 front-line	well as elicit		interviews	112
workers?		ambulance	suggestions for			
Emotional		workers	interventions			
outcomes and						
implications for						
intervention.						
Halpern et al.						
2009 ⁹³						
Police officers'	6	N=19	(1) What are police	England	Semi-structured	Thematic
experiences of		Police officers	officers' experiences		interviews	analysis
supportive and			of supportive and			
unsupportive			unsupportive			
social			interactions following			
interactions			potentially traumatic			
following			incidents?			

traumatic			(2) Do interactions			
incidents.			differ on the basis of			
Evans et al.			the context and			
2013 ⁹⁴			source of support			
			(i.e., at work with			
			colleagues and			
			supervisors, or outside			
			of work with family			
			and friends)?			
			(3) How do			
			supportive/unsupporti			
			ve interactions			
			facilitate/hinder the			
			processing of			
			traumatic incidents?	· NA		
Interventions for	6	N=60	To explore and	Canada	Focus groups/	Ethnographic
critical incident		4 supervisors,	describe Emergency		individual	content analysis
stress in		54 front-line	Medical Technicians'		interviews	
emergency		ambulance	(EMTs) experiences			
medical services:		workers	of critical incidents			4
a qualitative			and views about			
study			potential			
Halpern et al.			interventions, in order			
2008 ⁹⁵			to facilitate			4
			development of			
			interventions that take			
			into account EMS			
			culture			
Barriers and	9	N=32	To explore factors	United states	Ethnographic	Content analysis
Facilitators to	9	Twenty-five	that influenced FRs'	Officed States	individual	Content analysis
Seeking Mental		(78%) of the	perceptions of mental		interviews	
Health Care			· ·		nnerviews	
Among First		participants were active	health problems and			
Among rust		active				

Responders:		firefighters, 15	engagement in MH			
"Removing the		(47%) were	services.			
Darkness"		certified EMTs,				
Jones et al,		and 11				
2020 ⁹⁶		(34.4%) were				
		certified EMTs/				
		paramedics.				
Exposure to	6	N=18	This mixed-methods	Canada	Semi-structured	Thematic
human tragedy,		Paramedics	study attempts to		interviews	analysis
empathy, and			better understand			
trauma in			factors that lead to			
ambulance			higher levels of			
paramedics.			distress among			
Regehr et al,			paramedics within the			
2002 ⁹⁷			theoretical framework	- N _L		
			of emotional and			
			cognitive empathy.			
The meaning of	5	N=362	The aim of this	Sweden	Written reports	Phenomenologic
traumatic events		240 EMTs,	phenomenological			al analysis
as described by		122 registered	study is to uncover		1/6	
nurse sin		nurses	the essence of			al analysis
ambulance			traumatic events			
service			experienced by			
Jonsson et al.			Swedish ambulance			
2003 ⁹⁸			personnel.			
Guilt, shame and	4	N=10	The phenomenon	Sweden	Individual	Descriptive
need for a		Ambulance	approached in this		interviews	phenomenology
container: a		nurses and	study could be			
study of post-		ambulance	described as 'the way			
traumatic stress		technicians	ambulance staff			
among			experience and			
ambulance			handle traumatic			
personnel			events'.			

Jonsson et al. 2004 ⁹⁹						
Situation Critical: High Demand, Low Control, and Low Support in Paramedic Organizations Regehr et al. 2007 ¹⁰⁰	7	N=17 Paramedics	This mixed-methods study involving survey design and qualitative interviews seeks further to understand the factors related to these high levels of occupational stress.	Canada	Long interviews	Constant comparative method
Emergency Medical Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ¹⁰¹	8	N=17 Paramedics and EMTs	This qualitative study was conducted to increase understanding about the difficulties of responding to pediatric calls and to obtain information about how organizations can better support EMS providers in managing potentially difficult calls.	United states	Focus groups	Directed content analysis
An assessment of the need of police officials for trauma intervention programmes – a qualitative approach.	5	N=40 Police officials	To conduct a qualitative situational analysis by exploring the experience and specific needs with regards to trauma and trauma intervention of police officials within the North-	South Africa	Focus groups	Thematic analysis

Boshoff et al. 2015 ¹⁰²			West Province's specialist units.			
A preliminary	4	N=31	This preliminary study	England	Individual	Thematic
investigation of		11 firefighters,	aimed to conduct an		interviews	analysis
post-traumatic		8 station	in-depth investigation			
stress symptoms		officers, 4 sub	of symptoms cited by			
among		officers, 4	fire service personnel			
firefighters		leading	and assess potential			
Haslam et al.		firefighters, 2	risk factors for mental			
2003103		fire control	health and PTSD.			
		officers, 2 area				
		divisional officers				
A qualitative	4	N=13	To explore the	Spain	Semi-structured	Thematic
study about		7 EMTs, 6	experiences, emotions		individual	analysis
experiences and		ambulance	and coping skills		interviews and	
emotions of		nurses	among emergency	_	focus groups	
emergency			medical technicians			
medical			and emergency		1/6	
technicians and			nurses after			40
out-of-hospital			performing out-of-			
emergency			hospital			
nurses after			cardiopulmonary			
performing			resuscitation			4
cardiopulmonary			maneuvers resulting			
resuscitation			in death.			
resulting in death						
Fernández-Aedo						
et al. 2017 ¹⁰⁴						
Experiences of	7	N=25	The purpose of this	Sweden	Semi-structured	Structural
and actions		Ambulance	study was to describe		individual	analysis/Critical
towards worries		nurses	critical incidents in		interviews	incident
among			which ambulance			technique
ambulance			nurses experience			

nurses in their			worry in their			
professional life:			professional life and			
A critical			the actions they take			
incident study			in order to prevent			
Svensson et al.			and cope with it.			
2008105						
Exploring the	5	N=7	The aim of this study	England	Biographical	Thematic
nature of		Paramedics or	was to explore the		narrative	analysis
resilience in		EMTs	question of how		interviews and	
paramedic			paramedics 'survive'		semi-structured	
practice: A			their work within the		interview with all	
psycho-social			current healthcare		participants	
study			climate.			
Clompus et al.						
2016 ¹⁰⁶				- N_		
First response	5	N=35	The purpose of this	Sweden	Group	Interpretive
emergency care		Firefighters	paper is to describe		interviews	qualitative
- experiences			firefighters'		\mathcal{O}_{1}	content analysis
described by			experiences of first			
firefighters			response emergency			
Abelsson et al.			care			
2019 ¹⁰⁷						
Paramedics'	5	N=28	To explore	Canada	Focus groups	Inductive
experiences with		Paramedics	paramedics'			thematic analysis
death			experiences and			
notification: a			coping strategies with			
qualitative study			death			
Douglas et al.			notification in the			
2013 ¹⁰⁸			field.			
			The aim of the study	Italy	Semi-structured	Not made
Peer-support: a	4	N=14	The ann of the study	_		
Peer-support: a coping strategy	4	N=14 Ambulance	is to explore the		interviews	explicit
	4				interviews	explicit
coping strategy	4	Ambulance	is to explore the		interviews	explicit

Ambulance			service nursing staff			
Service			in relation to the use			
Carvello et al.			of the peer			
2019 ¹⁰⁹			supporting model.			
Experiences	8	N=22	The aim of this	Sweden	Individual	Critical incident
among		10 police	interview study was to		interviews	technique
firefighters and		officers, 12	explore firefighters'			
police officers of		firefighters	and police officers'			
responding to			experiences of saving			
out-of hospital			lives in OHCA in a			
cardiac arrest in			dual dispatch			
a dual dispatch			programme.			
programme in						
Sweden: an				No.		
interview study				- N_		
Hasselqvist-Ax				90/		
et al. 2019 ¹¹⁰						
Working in	8	N=14	The purpose of this	Portugal	Semi-structured	Thematic
prehospital		Ambulance	paper is to explore,		interviews	analysis
emergency		personnel	from this group			
contexts: Stress,			perspective, sources			
coping and			of stress, coping			
support from the			strategies and support			
perspective of			measures			
ambulance						
personnel						
Oliveira et al.						
2019 ¹¹¹						
Exploring	7	N=8	The study aim was to	Canada	Semi-structured	Constructivist
paramedic		Paramedics	learn about peer		individual	grounded theory
communication			communication and		interviews	
and emotional			emotional expression			
expression in the			between paramedics			
workplace after			in the workplace,			

responding to			after they respond to			
emergency calls			calls.			
Drewitz-						
Chesney et al.						
2019112						
Mental Health in	6	N=5	The study aims to	United Kingdom	Semi-structured	Thematic
the UK Police		Police officers	explore institutional		individual	analysis
Force: a			negativity and stigma		interviews	
Qualitative			in the police force			
Investigation into			towards mental ill			
the Stigma with			health			
Mental Illness			1 h			
Edwards et al.						
2020113				Y		
Living in Critical	2	N=27	The principal aim of	Ireland	Individual	Thematic
Times: The		21 EMTs, 6	this second stage of		interviews	analysis
Impact of		EMCs	the study was to		evie	
Critical Incidents			ascertain, using		C1.	
on Frontline			qualitative methods,			
Ambulance			the impact of CIs on		1/6	
Personnel: A			frontline staff by			
Qualitative			allowing them to tell			
Perspective			their own stories.			
Gallagher et al.						
2007 ¹¹⁴						4
Police officers.	5	N=59	The processes	England and	Phone interviews	Thematic
mental (ill-)		52 police	through which some	Wales	r none interviews	analysis
health and		officers.	police officers with	vvales		arialysis
spoiled identity		2 police staff,	mental ill-health			
Bullock et al.		4 PCSOs,	experience			
2018 ¹¹⁵		1 special	stigmatization.			
2010		constable	Sugmanzanom.			
		Constable				

Domain		ŀ	ligher level theme		Descriptive the	emes
Table 2:			<i>\O_{\text{\ti}}\\ \text{\tex{\tex</i>	20/	/ _	
2018 ¹¹⁶						
technicians Folwell et al.						
medical			and personally.			
emergency			them professionally			
volunteer			experience affects			
strategies in			and how this			
and coping			resuscitation efforts			
study of stress			unsuccessful pediatric			
not fine:' a case			of ESP involved in			analysis
die and you're		EMTs	the lived experience		interviews	comparative
'You see a baby	6	N=25	This study explores	United States	Individual	Constant

Table 2:

Domain	Higher level theme	Descriptive themes
Factors contributing to mental health recovery	Organisational	-Time out/Downtime -Supervisor -Official peer support network
	Informal support	-Colleagues and family -Regular partner -Reassurance and validation
Factors influencing help-seeking behaviour	Nature of intervention delivery	-Mandatory vs non-mandatory -Shared experiences with intervention provider

Stigma as a help-seeking barrier	-Macho culture
	-Stigma and shame
	-Career concerns
	-Confidentiality concerns
Mental health literacy	-Emotional awareness
	-Education and stigma

				ВІ	MJ Open		bmjopen-20		
		Stigma as	a help-seeking bar	-	Macho culture Stigma and shame Career concerns Confidentiality concerns		bmjopen-2020-047814 on 2 Febru		
		Mental hea	•	-	Emotional awareness Education and stigma		uary 2022. Do		
			Dr.De				February 2022. Downloaded from http://bmj		
							p://br		
	ementary File 1	1	1			T-4. 4.			Γ
Online Supple Study title (Authors, year)	Aims & Methods	Research design	Sampling	Data collection	Reflexivity	Ethical issues	Data analysis	Discussion of findings	Value

				ВМЈ	Open		bmjopen-2020-04		
							020-04		
Police officers' experiences of supportive and unsupportive social interactions following traumatic incidents. Evans et al. 2013 ⁵⁶	Research aims made clear in objectives section. Overall aim 'was to understand the types of support processes that might promote resilience'. Methods are appropriate as experiences, and other subjective outcomes are best measured qualitatively.	Semi-structured interview design appears reasonable to explore the proposed aims, but choice of qualitative study design not directly justified.	19 Police officers. A snowballing approach was used to recruit officers, which allowed detection of information-rich participants. By limiting participants to those who have served over 2 years, the chance of traumatic incident exposure was increased. Limiting participants to those without diagnosed PTSD was appropriate as the study measured	An interview schedule was used for the semi- structured interviews, although only the broad focus of the schedule was provided by the authors. Interviews were audio- recorded and transcribed werbatim. No information was given regarding interview setting, and data saturation was not discussed. No justification for choice of methods.	Researchers acknowledge how their role as researchers could have affected the data, giving social desirability bias as an example.	A National Health Service ethics committee granted ethical approval, and participants provided informed consent. No information is provided regarding efforts to maintain confidentiality.	The process commatic analysis was discribed in detail. All theress generated can be linked with relevant hist order data. Contradiony data is taken into account and present withing the themes. Three authors pere involved in the analytic process to miggies bias. One author house he main role in the analysis, while two others cropereferenced cessiin parts of their work in other to others or other to others or other work in other to	Themes are clearly summarised, with relevant quotations to support each theme. Findings are discussed in relation to the research aims. Three researchers were involved in the analytic process.	The researchers provide detailed recommendation for further quantitative research. Furthermore, th researchers recommend similar qualitative research in a population that has a history of PTSD, so that comparisons can be mad
Interventions for critical	Clear statement of study	Explanations were	resilience-promoting investigations, Non-participation was not discussed. 4 supervisors, 54 front-	The setting of the data		Ethical approval was	increase credibility. All 3 researchers rephed a consensus on inclear issues before @ final themes were abcided upon.	The findings are clearly	The research conclusions
incident stress in emergency medical services: a qualitative study Halpern et al. 2008 ⁴³	aims, with overall study purpose' to facilitate development of interventions that take into account EMS culture.' Examining experiences adequately requires qualitative methodology.	provided for how the focus groups and semi- structured interviews were conducted. Eg flexible interview structure ' to permit the elaboration of more in-depth or emotionally significant data' and focus group size of 4-8 members 'to	line ambulance workers. Participants were sampled to ensure all job levels and genders were represented. Researchers state that participants were recruited from a specific cohort at a mandatory training conference, but no detail is given about what	collection away from the workplace was stated but not explained. Detail was given about the length of interviews and focus groups, and the main topics of questions asked during interviews and focus groups were stated. The researchers stated	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	obtained from a research ethics board, and participants signed a consent form. No further information was given regarding any ethical safeguards in place.	ethnographic orient analysis was used to generate themotic codes, using a constant comparative method to categorise themes. Initial and final codes are described. The outhors explain why tenual data was not analysed for focus	presented, using relevant participant quotations to support the authors interpretations. 3 analysts were used during the data analysis process. Member validation was carried out 6 months after data was gathered. Contradictory viewpoints are taken into	appear relevant to all EM organisations which operate in the format of using supervisors. The authors provide suggestions for interventions which are o relevance to EMS organisations. The author recommend that the
		maximize interactive data'. No justification given for choice of interviews and focus groups.	information was provided to the participants to entice them to enter the study. The sampling process was iterative– preliminary analysis informed subsequent sampling decisions. No further participants were recruited once saturation was reached.	they had reached saturation by the end of the study. Data obtained was in the form of audio recordings, written transcripts and written notes of non-verbal communication information as observed by the researchers.		0/7	groups. Member validation was carried on months post initial date collection. Contradictory data are presented an Oscussed, and sufficient Na are presented to Opport the findings.	account and discussed.	interventions of: 1. Supervisor support 2. Timeout period post-incident should be further researched.
Barriers and Facilitators to Seeking Mental Health Care Among First Responders: "Removing the Darkness" Jones et al, 2020 ⁶²	Aims are clearly stated and the study's importance justified. The authors aims include exploring organisational culture and perceptions of individuals, for which qualitative research is appropriate.	The decision to use individual ethnographic interviews the qualitative method of choice is well explained. The authors also explain why they chose a 'community-based approach'.	32 firefighters and/or EMTs/paramedics. This was a convenience sample. The principal investigator facilitated recruitment by developing relationships	Ethnographic ndividual interviews were conducted with participants by the principal investigator. An interview guide was used and attached, which was developed by the PI based on the	The principal investigator acknowledged how being married to a firefighter/paramedic promoted buy in from the community during the recruitment stage.	Ethical board approval was gained. 'Prior to starting the interview, the PI reviewed the study information sheet and completed the consent process with each	Content analyse and constant companies on methods were seed during the analytic process. Themes which amerged during data are seed to the checked with continuous in later interviews. Two researchers in principals in later interviews.	Findings are presented as themes, with participant quotations included for each theme to support the author's interpretations. Credibility was enhanced by the use of more than one analyst, and member	The authors make implications for practice, identifying 'need for improving education and awareness regarding duty related MH problems.' TI authors also make implications for nursing

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Exposure to human	Aims of study are clearly	Choice of qualitative study	who each recruited participants from their own organisations. They did this by distributing e-mails on behalf of the principal investigator. Reasons for non-participation: 'individuals not answering or returning calls (all were called twice), scheduling conflicts'	a qualitative methods expert, along with feedback from community partners to strengthen trustworthiness and validity. Interviews were audio recorded and transcribed. Field notes were also conducted by the authors. Data collection setting was decided on the basis of convenience for participants. Data saturation was reached.	Researchers do not	further emotional support were provided to participants in case of emotional distress experienced during the study. No mention of ethical	analysed the process until consensuowas reached. (on 20% of top level codes). Exploration of new themeof was stopped where attraction was reached. Exploration was reached. Exploration was reached. Exploration was reached. Explorations are provided throughout top poport the author's interpolations. The researched sacknowledge that sisk due to the properties investigator conducting all the interviews of the support the fillings, and contradictory data are reported (success positive and negative apperiences of therapists).	discussed in relation to the original research question.	for future research.
tragedy, empathy, and trauma in ambulance paramedics. Regehr et al, 2002 ⁴⁰	stated, and their importance justified. Qualitative methods are appropriate because the authors want to explore experiences in depth.	design not explicitly justified.	'Purposive sampling was used to ensure that participants represented a wide range of experiences in terms of length of time with the service and types of events encountered.' Non participation was not discussed.	guide was used to conduct interview, and the authors provided examples of guide topics. These interviews were audiorecorded and transcribed, and field notes were taken. The authors acknowledge they required a larger than normal sample size to achieve saturation. No information is provided for the setting of data collection. 'Other sources of data included the notes recording the interviewer's impressions.'	critically examine their role, potential bias and influence of research question formulation or data collection. No mention of changing the research design as the study progressed.	approval, or consent gained from participants. No attempt is made to explain how confidentiality was maintained.	data analysis. Seen coding was used initially to generate broadcategories. Towards the process, specitive coding was used to develop a meringful narrative of the workers. Interceivers also recorded field obtes. Triangulation of the workers in the general service organization was carried out the gloout the research, and bodysis of data was discreted. Two members of the research team developed the coding tree together the third member reviewed the open and selective coding. It is not clear how the themes were the themes were the data, but specificient data are presented as support the findings. Centradictory data are included in the findings and discussed.	sections headed by themes. Author's comments are supported by first order interpretations. Triangulation with members of emergency service organization was carried out throughout the research, and analysis of data was discussed. Two members of the research team developed the coding tree together. A third member reviewed the open and selective coding.	that the study is 'not intended to reflect the views of all paramedics in all organizations', rather, it describes a particular phenomenon experienced and described by one group of paramedics and points to some interesting avenues for further consideration. These include future attempts to measure cognitive and emotional empathy in paramedics and assess the impact of these strategies on posttraumatic and depressive symptoms and on social supports.'

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The meaning of traumatic	Aims of study are clearly	A phenomenological	240 medical technicians	The question the	Researchers do not	Ethical approval was	Van Kaam's seientific	The findings are in the	The authors recommend
events as described by	stated, and their	approach was used, and	and 122 registered	participants were asked to	critically examine their	granted. Consent was	explication was used to	form of themes, supported	specific areas for further
nurse sin ambulance	importance justified.	the reason for its us	ambulance nurses.	answer was: 'Write down	role, potential bias and	implied through willingness	analyse the written stories.	by first order data and the	research, limited to the
service	Qualitative methodology is	thoroughly explained. The	The authors asked 500	and describe a situation	influence of research	to participate in the study,	Detail was provided about	author's interpretations.	ambulance sector. The
Jonsson et al. 2003 ⁴⁴	appropriate due to nature	use of self-reports over	participants of another	which you experienced as	question formulation or	but no information is given	the steps of this thematic	The findings are related to	organisational
001100011 01 011 12 0 0 0	of the aims, which is to	the use of interviews was	study to write down their	a traumatic event". From	data collection.	regarding a signed consent	analytic process Only	the original research	interventions
	explore subjective	not justified (the authors	experiences with traumatic	the data returned by the	No mention of changing	form. In addition,	25% of the titten	question in the discussion.	recommended by the
	experiences in detail.	said that interviews and	events. No detail is given	participants, the authors	the research design as the	participants were assured	stories were f	There is no mention of	authors are likewise lim
	experiences in detail.	self-reports are the most	how the sample of the	selected 25% of the	study progressed.	that they could withdraw	analysed, and were	any efforts to increase the	to the ambulance secto
		common methods in	other study was recruited.	written accounts to further	study progressed.	from the study at any	strategically selected for	credibility of the findings.	to the dinodiance secto
		empiric-phenomenological	Non participation is not	analyse. These written		time. The questionnaire	being more date-rich.	creationity of the intangs.	
		studies.	discussed.	accounts were strategically		was not labelled with the	There is no in mation to		
		studies.	discussed.	selected based on having		name of the participant.	reveal how many		
				the fullest description of a		Confidentiality was	researchers and involved in		
				traumatic event. Details of		guaranteed by eliminating	·		
						names or other identifying	the analytic pracess.		
				the analytic process are		characteristics from the	Sufficient data presented to support the indings.		
				provided. Saturation of					
				data is not discussed.		essays.	There is no nention of		
							contradictory data being		
							taken into account. The		
							critically appraise their		
0.01.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	4		40.1.1				own potential (b) as.		
Guilt, shame and need for	Aims of study are clearly	Descriptive	10 Ambulance nurses or	Setting for interviews was	Researchers do not	The study was described,	The authors provide	Findings are displayed	The results can be appli
a container: a study of	stated, and their	phenomenology was	ambulance technicians.	described but not justified.	critically examine their	the extent of participation	details about 5 steps	under relevant sub-	to emergency medical
post-traumatic stress	importance justified.	'chosen for its potential to	Insufficient information on	Interviews were open in	role, potential bias and	was explained, and	of the analytic rocess,	headings. In the discussion	organisations, however
among ambulance	Qualitative methodology is	grasp the meaning of such	how participants were The	structure, beginning with	influence of research	potential risks were	with the latter teps being	section, there is some	caution should be taken
personnel	appropriate due to nature	phenomena through the	only relevant information	the question "tell about a	question formulation or	explored with the	repeated once the author	debate for and against the	due to the small sample
Jonsson et al. 2004 ⁴⁵	of the aims, which is to	description of lived	is that participants were	traumatic event that you	data collection.	participants, who were	was familiar was existing	researcher's arguments.	size and lack of
	explore subjective	experiences.'	strategically selected to	have experienced". 'do		assured that they had the	philosophy. Due to the	No attempts made to	information about
	experiences in detail.		obtain a 'variation of sex,	you mean?" or "How did		right to withdraw from the	authors not using	demonstrate efforts to	participant demographic
			age, educational	you feel about that?". The		study at any time. The	participant questions (to	enhance credibility.	The authors recommend
			background, and	interviews, taking about an		study was approved by the	protect participant		for the insights gained b
			experience as ambulance	hour and a half each, were		Ethical committee at	confidentiality Dit is not		this study to be '
			staff.'	audio-taped and		Göteborg University. To	possible to determine whether the author's		distributed to all
				transcribed word by word.'		protect participant			ambulance managers an
				Reason for choice of		confidentiality, no	findings are supported by		other relevant personnel
				interview as method of		quotations were provided.	first order interpretations.		categories.
				data collection not			Contradictory Nata are		'The authors make
				explained. Saturation of			discussed, but without the		specific recommendation
				data not discussed.			direct participant		for management.
							quotations.		
Situation Critical: High	Aims of study are clearly	Long interview design was	17 paramedics.	A long interview method	Researchers do not	No mention of ethical	Data analysis mmenced	Findings are presented in	The authors make
Demand, Low Control,	stated, and their	chosen 'to explore in	Paramedics were	was used to collect data.	critically examine their	approval, or consent	with open coding that	themed subheadings.	recommendations for E
and Low Support in	importance justified.	detail the experiences of	purposively sampled from	The interviews followed an	role, potential bias and	gained from participants.	captured a bread range of	Authors claim to have	organisations, based on
Paramedic Organizations	Qualitative methodology is	paramedics in their	the sample of participants	interview guide (not	influence of research	No attempt is made to	perspectives, whereas axial	enhanced credibility	mixture of their
Regehr et al. 2007 ⁴¹	appropriate due to nature	organizations including	partaking in the	provided), were audio	question formulation or	explain how confidentiality	and selective eding	through 'prolonged	quantitative and qualitat
	of the aims, which is to	their roles, the demands	quantitative component of	recorded and transcribed	data collection.	was maintained.	facilitated the fructuring	engagement and persistent	results.
	explore subjective	placed on them, the	the study. Purposive	verbatim. The interviewer			of a coding framework.	observation'. No mention	
	experiences in detail.	control over the working	sampling was used to	made their own notes			After the initian coding	of more than one analyst,	
	experiences in detain								
	esperiences in detain	environment that they	ensure that participants	during the interview.			framework was developed,	and qualitative findings	
	ospononees in detail	environment that they experience, and the supports that they receive.'	ensure that participants represented a wide range of experiences in terms of	during the interview. Setting of data collection not provided, saturation of			framework was developed, the transcribed interviews were imported into	and qualitative findings were triangulated with quantitative results.	

'	their I he use of focus groups was not explicitly justified.	length of time with the services and types of work experiences encountered. 17 EMS providers. ' Paramedics and EMTs	The process of focus group conduction was	The researchers reflect on the potential biases of the	Participants gave informed	N*VIVO, a conjuter generated data analysis system, and the interview data were coded by multiple codes and subjected to distinct the final stage of Galysis, constant comparative method of day unalysis was implement to compare catelonies and themes acrostores on the final stage of Galysis, constant comparative method of day unalysis was implement to compare catelonies and themes acrostores or respondents. Or Furthermore, arramedic organisations or consulted who creating the research project to guide it with feedback sufficient data are presented to support the findings, and contradictory that taken into account.		
Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ unpropriate confidency, explore subje	their I he use of focus groups was not explicitly justified.	17 EMS providers. ' Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	system, and the interview data were codes by multiple codes and subjected to distinct thematic analysis. In the final stage of Gallysis, constant comparative method of data unalysis was implement to compare catelogies and themes across respondents. Furthermore, aramedic organisations or consulted wheele creating the research destions, and throughout the research of stilling the stilling that the research project to guide it with feedback of sufficient data are presented to support the findings, and contradictory the findings, and contradictory that taken into account.		
Services Provider stated, and the Perspectives on Pediatric importance ju Qualitative Study Jessica et al. 2019 ⁴⁶ appropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	17 EMS providers. Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	data were code by multiple code's and subjected to desided thematic analysis. In the final stage of Evalusis, constant comparative method of data whallysis was implemented to compare catelogical to compare consulted who creating the research destions, and throughout the research project to guide it with feedback sufficient data are presented to support the findings, and contradictory that taken into account.		
Services Provider stated, and the Perspectives on Pediatric importance ju Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ appropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	multiple coders and subjected to distilled thematic analysis. In the final stage of Fallysis, constant comparative method of day analysis was implemented to compare catelogies and themes across respondents. Or a subject organisations were consulted when creating the research project to guide it with feedback sufficient data are presented to support the findings, and contradictory that taken into account.		
Services Provider stated, and the Perspectives on Pediatric importance ju Qualitative Mudy Jessica et al. 2019 ⁴⁶ qualitative mappropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	subjected to defined thematic analogs. In the final stage of malysis, constant comparative method of day analysis was implemented to compare categories and themes across respondents. Of the stage of t		
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Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ Qualitative m appropriate of the aims, v explore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	method of dan unalysis was implement to compare cate wies and themes across respondents. Or Furthermore, arramedic organisations erre consulted when creating the research project to guide it with feedback sufficient data are presented to support the fisclings, and contradictory that taken into account.		
Services Provider stated, and the Perspectives on Pediatric importance ju Qualitative Mudy Jessica et al. 2019 ⁴⁶ qualitative mappropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	was implement to compare cate when sarross respondents. Or Furthermore, was a made to reasonable to respondents organisations or econsulted when creating the research of the consulted when creating the research project to guide it with feedback sufficient data are presented to support the findings, and contradictory was taken into account.		
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Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ Qualitative m appropriate of the aims, v explore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	respondents. Namedic organisations orre consulted who creating the research destions, and throughout the research project to guide it with feedback sufficient data are presented to support the findings, and contradictory the into account.		
Services Provider stated, and the Perspectives on Pediatric importance ju Qualitative Mudy Jessica et al. 2019 ⁴⁶ qualitative mappropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	respondents. Neuroper in the research destions, and throughout the research project to guide it with feedback fluidicient data are presented to support the ffidings, and contradictory the into account.		
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Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ umportance ju Qualitative m appropriate c of the aims, v explore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	organisations ore consulted whe creating the research sestions, and throughout the research project to guide it with feedback sufficient data are presented to support the findings, and contradictory that taken into account.		
Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ umportance ju Qualitative m appropriate c of the aims, v explore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	consulted whe creating the research estions, and throughout he research project to guide it with feedback sufficient data are presented to support the fiscings, and contradictory that taken into account.		
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Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ Qualitative m appropriate of the aims, v explore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	the research estions, and throughout the research project to guide it with feedback. Sufficient data are presented to support the fiscings, and contradictory that taken into account.		
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Services Provider stated, and the Perspectives on Pediatric importance ju Qualitative Mudy Jessica et al. 2019 ⁴⁶ qualitative mappropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	data are presented to support the fixings, and contradictory data taken into account.		
Services Provider stated, and the Perspectives on Pediatric importance ju Qualitative Mudy Jessica et al. 2019 ⁴⁶ qualitative mappropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	support the findings, and contradictory tale taken into account.		
Services Provider stated, and the Perspectives on Pediatric importance ju Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ appropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	contradictory data taken into account.		
Services Provider stated, and the Perspectives on Pediatric importance ju Qualitative Study Jessica et al. 2019 ⁴⁶ appropriate of the aims, vexplore subje	their I he use of focus groups was not explicitly justified.	Paramedics and EMTs	The process of focus	The researchers reflect on	Participants gave informed	into account.		
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Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ Qualitative m appropriate of the aims, v explore subje		1	group conduction was	the meteorial bisees of the		1	Findings are presented as	The findings are relevant
Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶ Qualitative m appropriate of the aims, v explore subje	justified.			the potential blases of the	consent and ethical	using directed	sub-themes, with	to EMS organisations,
Jessica et al. 2019 ⁴⁶ appropriate of the aims, vexplore subje		were recruited for the	thoroughly described. A	study in the limitations	approval was gained from	analysis. Two viewers	quotations supporting each	specifically EMS leaders.
of the aims, v	methodology is	study through invitations	semi-structured guide was	section. They acknowledge	an ethics committee.	independently coded	sub-theme in a separate	Although Desired support
explore subje	due to nature	circulated via weekly staff	used by the researcher to	that by using discussion	Resources were provided	20% of the ranscripts,	table. Credibility of	mechanisms following
· · · · · · · · · · · · · · · · · · ·	which is to	emails, flyers posted at	conduct the focus groups-	prompts, they may have	to the participants in case	and a single recarcher	findings was enhanced by	difficult paediatric calls can
experiences i	jective	ambulance bases, the	the same researchers	steered the conversation	of experiencing	coded the remaining data.	reviewing the focus group	be extrapolated to other
	in detail	agency's social media	conducted all the focus	away from topics that the	psychological distress.	Findings were validated	themes with participants at	types of traumatic events.
		page, and e-mails from	groups. At the end of the	participants would		through group consensus.	the end of the focus	
		the EMS chaplain.	focus group, themes were	otherwise have talked		Quotations are provided	group. Furthermore, some	
		Interested participants	fed back to participants,	about. Furthermore, they		for all sub-themes.	of the data was reviewed	
		were instructed to contact	who were invited to	acknowledge that the fact		Authors acknowledge the	by two researchers.	
		a single study investigator	comment. Focus groups	that a single coder was		limitations of Qus groups,		
		by phone or email	were conducted at a large	responsible for coding		and the potential for bias		
		'Selection criteria were	ambulance service. Audio	80% of the data alone		with one researcher		
		applied to the participants	recordings were	may be a source of bias.		coding 80% 1 the data.		
		in order to sample for the	transcribed. A second			The authors as		
		most relevant participants-	researcher was present			acknowledge		
		participants had to be	during the focus group to			discussion gui prompts		
		working for over a year in	take notes. Thematic		1	may have altered the topic		
		order to increase chance	saturation was reached.			of discussion of		
		of traumatic incident			1	participants from what		
		exposure. Non				they would otherwise have		
		participation was not			1	talked about. Antradictory		
		discussed.				data are taken 2 nto		
						account.		
An assessment of the need Aims of study	dy are clearly Focus groups were chosen	40 police officials.	Setting for data collection	Researchers do not	Ethical approval was	The authors describe an 8	Findings are presented as	The authors give a variety
of police officials for stated, and the		I Burner and	was not outlined. Three	critically examine their	gained for this study from	step method thematic	sub-themes, supported by	of 'preliminary indicators'
		Participants were recruited				pyright.		

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trauma intervention programmes - a qualitative approach. Boshoff et al. 2015 ⁵⁷	importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	collection in order to 'allow the researcher to gain insight into participants' beliefs about and perceptions or accounts of a particular topic'. The researchers state: The focus groups allowed the researcher to interact systematically and simultaneously with several individuals.	via a purposive sampling method through the health and wellbeing departments, which were used as an intermediary between the researchers and participants. Police officials were purposefully chosen considering the relevance of the topic, specifically referring to their exposure to trauma, resultant symptoms of PTS and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that	focus groups were carried out, and semi-structured interviews were performed within the focus groups. Exact questions asked are provided by the researchers. The sessions were audio recorded, transcribed and analysed. Saturation of the data is not discussed.	role, potential bias and influence of research question formulation or data collection.	the North-West University's ethical committee . Informed consent was taken by the researchers. ' Participants were furthermore encouraged to withdraw from the focus groups at any time should they feel uncomfortable or experience any harm or emotional consequence as a result of participating in the study.'	analysis, but donot explain how the will apply this method. It is not clear how the data is used to arrive at the themes generated. Sufferent data are presented sufferent data are presented on the findings. Contradictory data are taken no account.	sufficient quotations. There is limited discussion for and against the researchers' arguments. No efforts are made to enhance credibility of findings.	for which a 'purposeful psycho-social trauma intervention programme' i indicated. The generalisability of this is limited to police forces.
A preliminary investigation of post-traumatic stress symptoms among firefighters Haslam et al. 2003 ⁶⁰	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	One-to-one interviews were chosen but reasons for their use over focus groups were not explained. The interview schedule was developed in conjunction with psychologists working within the fire service, as well using relevant literature.	non-participation would not be sanctioned. 11 Firefighters, 8 Station Officers, 4 Sub Officers, 4 Leading Firefighters, 2 Fire Control Officers and 2 Area Divisional Officers. No information provided on how participants were recruited. The sample was selected to cover the range of positions in the service and the proportion of respondents in each position broadly reflects the profile of the service.'	*One-to-one interviews were conducted in a private room with participants. They lasted or up to 90 minutes. The interview questions were stated by the researchers. Open-ended questions would be used to explore participants' feelings towards incidents. The interviews were recorded and fully transcribed and the data were analysed by sorting verbatim material into emergent themes as described by Dey (1993)." Choice of data collection methods or study setting was not justified. Saturation of data was not discussed.	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection. The researchers acknowledge that their small sample size may not be representative.	No mention of informed consent, ethical approval or methods to ensure confidentiality.	The interviews were recorded and sally transcribed by sall sall sall sall sall sall sall sal	Findings are presented as sub-headings of themes, with participant quotations supporting the authors' comments. Credibility is enhanced by the use of two analysts.	The authors provide recommendations for fire organisations. These recommendations are concerned with efforts to improve staff wellbeing.
A qualitative study about experiences and emotions of emergency medical technicians and out-of-hospital emergency nurses after performing cardiopulmonary resuscitation resulting in death	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	Both interviews and focus groups were used as methods of data collection, the reason for their use was not explained.	7 EMTs and 6 nurses. Snowball sampling was used to recruit the participants. As a prerequisite for their inclusion in this study, the health workers were required to have carried out at least 5 CPR	Questions asked during the interviews were ' developed based on the reviewed literature and experts' opinions', but the authors do not provide a topic guide or examples of other prompts. 'The assignment	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	'The study was approved by the Ethics Committee of the University of the Basque Country.' 'echnique was based on their availability and preferences. Participants gave their written consent to participate in the study	A detailed description of the analytical process is provided. To essure the quality of the the interpretation and guarantee the diability of the information between all researchers in live in the	Themes are not provided with any participant quotations. To ensure the quality of the interpretation and guarantee the reliability of the information obtained, a triangulation between all researchers involved in the	The authors recommend greater training for health professionals when 'notifying bad news and providing psychological support to the family members of the deceased 'No recommendations for research are made.

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Fernández-Aedo et al. 2017 ⁴⁷	~	techniques resulting in death over their entire professional career. No wolunteer staff was included in the study. 'In order to ensure heterogeneity, the study included healthcare professionals of different ages, both genders and varying years of experience, working at different institutions.' Non participation was not discussed.	of participants to' either individual semi-structured interviews or focus groups 'was based on their availability and preferences.' 'A total of 3 health emergency technicians and 3 nurses were interviewed individually for a total of 1135 min by two of the researchers involved in the study. The focus group was comprised by 4 EMTs and 3 nurses, and it was used to triangulate the information obtained during the individual interviews. The group session lasted 76 min and		and to be recorded in audio and/or video format.*	interviews warpso carried out. Any disagreement was resolved by consensus.' No participant questions are provided to support the authors' intermediations. Contradictory of the authors are not taken into account. 2022. Downloaded from http://bmjo	interviews was also carried out. Any disagreement was resolved by consensus.' Other than the use of multiple researchers in the analytic process, no other methods to increase credibility are discussed.	
Experiences of and actions owards worries among imbulance nurses in their importance justific Qualitative metho appropriate due to of the aims, which explore subjective experiences in de	the choice of semi- structured interviews as a fology is method of data collection.	25 ambulance nurses. Participants were strategically selected from three ambulance services based on 'socio- demographic and professional characteristics such as age, education level, sex and years in the	was carried out by two researchers, one acting as a moderator and the other as an observer. Data saturation was reached. The authors explain the structure of the interviews, giving examples of the open-ended questions which they ask to participants at the start of the interview. The authors say the interviews took place where it best suited	'As both the researchers and the nurses were familiar with the environment in which the study was conducted, the risk of misunderstanding during the interviews was minimised.'	'The managers of the ambulance service involved gave approval for the study to be conducted in their department.' The authors say ethical board approval is not required in Sweden under certain circumstances. The authors	The interview were also read through several times before categoring them into sub-categories, in order to furthe improve security. The midents were analysed according to character and content. This step was repeated	Findings are arranged into themes and sub-themes, and participant quotations are included for each theme to support the authors' conclusions. Credibility was enhanced via the use of two researchers when	The authors recommer further research: This phenomenon should be studied more in-depth order to map how the interaction with colleag influences the worry among ambulance nurs Some recommendation
		profession . Non participation is not discussed.	the participants, and three interviews were conducted over the phone. Researchers explain their use of interviews: 'Interviews were chosen as the data collection method, which allowed the respondents to describe their thoughts in more detail with the help of follow-up questions.' The authors also justify the use of the CIT method. Interviews were audio recorded and transcribed verbatim. Saturation of		describe how informed consent was taken from participants, including assurances that data will be treated confidentially. 'The study adhered to the principles outlined in the Declaration of Helsinki'	several times more the end result emerged. The categorizing concidents into sub-categorizes was conducted in Experienced both in theorem practice, which minimised the risk of suffectivity (Andersson and Nilsson, 1964). Direct quotes from the interpress accuracy of the study.	categorising incidents. Authors consider contradictory data in the discussion.	are also made for employers of nurses.

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Exploring the nature of resilience in paramedic practice: A psycho-social study Clompus et al. 2016 ⁴⁹	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors used free association narrative interviewing, a technique which involves a preliminary narrative interview, followed by a semi-structured interview. This enabled a deeper analysis of the affective and often unconscious aspects of paramedics' lives.	'An advert, with a brief study outline, was placed in a regional Paramedic bulletin which was circulated electronically to staff with an invitation to participate.' Participants had to fulfill the following criteria: -Grade of paramedic, technician or emergency care practitioner -Willing to volunteer their time Three out of the 10 individuals became unavailable, but the authors do not explain why.	The researchers justify their use of using Free association narrative interviewing. Saturation was achieved after the 6th interview. Details of the exact two stages of the interviewing process were provided by the authors. interviews were audio recorded and transcribed, and carried out at a place of the participants' choosing.	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	*Ethical approval was received from a (NHS) research ethics committee and a university in the SW of England. Confidentiality and anonymity was secured through the use of pseudonyms for participants, and all data were kept in a password protected personal computer with access limited to SC. Participants were made aware that they could withdraw at any time and that the anonymised data would be disseminated in various ways. Due to the potential distress that participation could inadvertently provoke, information on how to access counselling services was made available to all participants.*	support the fieldings. Saturation of that was not discussed. Details of the PANI analytic process were given by the rearchers. 'Any discrepation of the participant of the participants folling into the study's aim keeping contemporanous notes, and sending interview transcripts and of findings to such participant of the participant of	Themes are presented as sub-headings, and supported by the direct participant quotations. Member validation was carried out to improve credibility.	The authors relate the findings of the research to the theories of exiting organisational interventions, eg TRiM. The authors conclude that for front-line paramedics, 'applying interventions and reviewing support mechanisms would seem to be a pressing imperative.'
First response emergency care – experiences described by firefighters Abelsson et al. 2019 ⁶¹	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors justify their choice of group interviews, and why limits are set on group interviews. The group sizes of eight and nine participants were considered acceptable to moderate and managed by the researcher. Interaction in the pre-existing group is key to a successful group interview. In this study, all firefighters worked at the same fire station, which promoted interactions optimal for the research purpose.	Authors don't explain how participants were recruited into the study.	35 Firefighters. Setting for group interviews was not given. Participation numbers in the group interviews were provided and discussed. Justification for methods chosen was provided. A rough structure to the interviews was provided by giving questions which were asked to participants. There is no mention of saturation of the data. The authors reflected in the 'limitations' section that group interviews could lead to participants being uncomfortable.	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	No approval has been sought from an ethics committee, which is in accordance with Swedish law. Consent was implied through participation in the study, following the delivery of verbal 'clear information' by the researchers. Methods taken to protect confidentiality are described.	The authors describe their method of terrodriven, interpretive qualitative content analyse. This involved repetited readings of the transcribed interviews, and men identification. Womeaning units', then crues were derived, and formed into sub-categories. Sectioned data are present tradipport the findings. Consecutionly data are discussed. It is not clear how mail researchers were involved in the analytic process. There is no edicit mention of eligns to improve credibitiv. Authors acknowledge that	Findings are presented as four themes, with consistent use of primary quotations to support the researchers' arguments. The findings are discussed in relation to the original research question.	The researchers contrast their findings with other research in the field, such as in the case of spouses being used as sources of support by firefighters. They also recommend areas of future research, eg involving other strands of emergency service workers.

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Paramedics' experiences with death notification: a qualitative study Douglas et al. 2013 ⁵⁰	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors used focus groups as their method of data collection, but did not justify their use over other qualitative methods.	28 paramedics. Participants were self- selected. Recruitment messages were delivered via 'departmental e-mail, flyers, and by word-of-mouth'. Authors don't explain why the participants selected were the most appropriate for the study, and non- participation is not discussed.	The authors provide the locations of the focus groups, and give examples of questions asked during the sessions. There is no explicit justification for why focus groups were chosen over other qualitative methods. Methods were modified during the study as follows: The question guide was adapted as required by the author and the facilitator after each session to clarify some questions based on the paramedics' responses. Focus groups were audiotaped and transcribed. Saturation was discussed: the authors kept recruiting participants until saturation was reached.	The researchers acknowledged that their choice of focus group location, as well as the presence of the supervisor in the focus group may have affected the answers given by participants. The researchers do not critically examine their own role.	Ethical board approval was gained, and written consent obtained. No information is provided on efforts to maintain participant confidentiality.	'participants in roup interviews man experience a pressure within the group, resulting in similar opinions'. The authors of cribe an inductive approach to data analysis. Two of severe involved to the analysis processory of the analysis of the analysis processory of the analysis processory analysis of the analys	The findings are presented as themes, supported by participant quotations and authors' interpretations. Credibility was enhanced by distributing results from the study to participants for the purpose of generating feedback.	The findings are discussed in relation to existing literature, and the authors make recommendations for practice, specifically regarding paramedic training.
Peer-support: a coping strategy for nurses working at the Emergency Ambulance Service Carvello et al. 2019 ⁵¹	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors used semi- structured interviews. The authors explain their choice of questions result from pre-existing literature, but do not justify the use of interviews over other qualitative methods eg focus groups	'Participants were recruited on a voluntary basis from an emergency medical service in the north of Italy.' The sampling was 'non-probabilistic', according to the following criteria: nurses working at the emergency ambulance service "118" in a hospital in northern Italy, who had experience in the extra-hospital emergency. Non-participation is not discussed.	Data collection was at an italian emergency service organization called 118. The justification given by the researchers for choosing this location was to choose an environment familiar to the participants so that they would feel at ease. Semi-structured interviews are carried out with participants. The authors explain how they chose their questions, by taking inspiration from similar literature, but choice of interviews over other qualitative methods is not explained. The interviews were audio-recorded and conducted	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	Ethical approval was gained from the Bioethical Committee of the University of Bologna. Informed consent was gained from participants before participation. Efforts to protect confidentiality are not discussed.	The interviews were conducted and analyzed by all the researchers after having been implifully transcribed on digital text documents, reporting in brackets some where the comment of the	Findings are presented as themes. Authors discuss arguments for and against certain issues raised. One example of this is the inclusion of quotations of participants who prefer talking to a peer supporter, and those who prefer talking to a prefessional therapist. No mention is made of efforts to discuss the credibility of findings. Contradictory data are taken into account and discussed.	The authors relate their findings to their aims. They propose that a pee support program should be introduced in the ambulance service. No recommendations for further research are mad

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Working in prehospital emergency contexts: Stress, coping and support from the perspective of ambulance personnel Oliveira et al. 2019 ⁵² Oliveira et al. 2019 ⁵² Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail. The authors don't explain why semi-structured interviews were chosen over other qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail. The authors don't explain why semi-structured interviews were contents. The researcher project was approved by the participants (local professoral organisation, and were all conducted by the first author. Semi-structured interviews were conducted with their experiences. Details of how participants following an interview guide, details of which are provided, and non-participation was not discussed. The authors don't explain why semi-structured interviews took place at the participants (local professoral organisation, and were all conducted by the first author. Semi-structured interviews were conducted with their gracing participants in the study and to audo-record the interview was obtained, as follows: (We sent a cover letter to all selected by the authors. The choice of semi-structured interviews was sussified as it allowed the authors to obtain indepth information regarding participants in regarding participants in regarding participants in probability to withdraw was a content to participants in the study and to audo-record the interview was performed that interview was performed that interview was participants in the guitance of the participants in the subdy and to audo-record the interview was performed that interview was participants in the study, the process to reduce researcher based uning the coding proporate day to the coding proved by the authors. The choice of semi-structured interviews was submitted and to audo-record the interview was participants in t	firefighters and police officers of responding to out-of hospital cardiac arrest in a dual dispatch programme in Sweden: an interview study Hasselqvist-Ax et al.	stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective	their use of semi- structured interviews over	firefighters. Participants were purposively sampled for knowledge of two or more cardiac arrest situations, and to collect as rich descriptions as possible. Three recruitment approaches were used: '1) an invitation letter from the researchers was presented to the main collaboration group for OHCA alarms in Stockholm County; 2) on the police report for cardiac arrest alarms there was a request to contact the researchers for a voluntary interview; 3) fire stations were directly contacted for recruitment of participants.' Non-participation was not	interview guide with 7 open-ended questions, which form the basis for the semi-structured interviews. Settling for interviews: all but three took place at regular work places (not known where the others took place). Critical interview technique (CIT) was chosen as the method for data collection. The authors don't justify their use of this technique, but they justify their sample size based on the recommended sample size for CIT. Interviews were recorded and transcribed. The authors state no modification of methods during study were necessary. Saturation was discussed in relation to the critical incident technique-where 20 interviews (of 2-4 CIs per interview) provide sufficient data. The authors included 22	conducted by the same author, to increase the chance that they were conducted in a similar way. The authors list the researchers' relevant strengths and past experiences,	obtained. Written informed consent was obtained from the participants and information was given about the possibility to withdraw from the study without any reprisal. Participants were not entitled to financial remuneration or other	study where that were analysed by using critical incident technique (CIT) and inductive Content analyses. The authors explain the CIT process step invitep, and provide an example with a piece of internal data. To enhance creditiny, the researchers discussed the analysis at each step of the process, couring all analyses were opported by data. Occardinally the views of participants are summarised uphout examples of quotations. Contradictory that are taken into account, but saturation of the contradictory that are taken into account, but saturation of the contradictory at a reconstruction of the contradicto	as themes. Although participant quotations were provided, the authors didn't provide quotations for all of their comments. Often, the views of participants were summarised without providing participant	recommendations for swedish emergency organizations, such as giving indications for training of paramedics and
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Exploring paramedic communication and emotional expression in the workplace after responding to emergency calls Drewitz-Chesney et al. 2019 ⁵³	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors don't explain why semi-structured interviews were chosen over other qualitative methods.	8 paramedics. The recruitment strategy is explained in detail. Participants were recruited over facebook groups. 'Participants were sampled using convenience, then purposive sampling. Convenience sampling enabled initial recruitment. Snowball and quota sampling were the two forms of purposive sampling used.' Authors are not clear on which attributes are sampled for. The authors justified their choice of participants by saying that 'when sufficient information is gleaned from participants, a smaller sample size is required	Semi-structured interviews were performed with participants, but the researchers do not justify why interviews are chosen. Interviews were conducted using Skype, and participants could choose to interview via video or audio only. An interview guide is provided. Interviews were audio recorded and transcribed, and data collection was stopped once saturation was reached.	The recruitment messages mention that the researcher previously worked as a paramedic. The researchers acknowledge the possibility of confusion and bias that can arise from this, although this was minimised by the fact that the researcher didn't work with any of the participants.	'This study received ethical approval from the University of Edinburgh's Usher Research Ethics Group. Each participant provided verbal and written consent. To minimise the risk of psychological impact, participants were never asked to recall specific calls or details. Participants were monitored for signs of distress during each interview (none were noted). BCEHS paramedics have access to three services offering support and counselling. These services were listed on their information letters. At the conclusion of each interview, participants were asked if they wanted a referral to any of the services, which all participants declined.'	analysis and to ustrate themes with variatim descriptions from participants. Sufficient data are presented to support the findings, and contradictory used are taken into accument. The authors used constructivist counded theory in their constructivist constructivity. The constructivity constructivit	Quotations are interspersed among the results which are presented as themes. Credibility was enhanced through the use of triangulation with leading members of the organisation.	The researchers consider their findings in relation texisting literature. They also make various recommendations for emergency service organisations, relating to post-incident organisational interventions that could protect paramedic wellbeing.
Mental Health in the UK Police Force: a Qualitative Investigation into the Stigma with Mental Illness Edwards et al. 2020 ⁵⁸	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors justify their use of open-ended questions in semi- structured interviews to facilitate meaningful discussion, although the choice of interviews other qualitative data collection methods is not justified.	Five police officers. 'Participants were recruited through a referral from a charity, personal network, police forum and contact from within the police force.' The authors outline the criteria for participant inclusion in the study. They do not however justify their	Semi-structured individual interviews were conducted using a topic guide, of which the authors provide details. The authors justify their use of open-ended questions. Interviews were audio recorded and transcribed. Data saturation was not discussed.	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	Ethical board approval was obtained, as well as written consent from the participants. The researchers also had measures in place to support participants who experience distress due to participation in the study.	The authors and Braun and Clark's approach of thematic anal street in detail, giving comples of how they arrifed at themes from the data. It is unclear whether multiple researchers comproved to compare coding. Participant quantions are	Findings are presented as themes and sub-themes. The authors include contradictory data, and discuss this. Discussion takes place throughout the study within the results section, but there is also a separate discussion section.	The authors identify areas where further research would be valuable, such a barriers to help-seeking i male dominated professions. Recommendations are als made to police organisations, such as highlighting a need to increase mental health

				ВМЈ	Open		bmjopen-2020-04		
Living in Critical Times: The Impact of Critical Incidents on Frontline Ambulance Personnel: A Qualitative Perspective Gallagher et al. 2007 ⁵⁴	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors don't justify why they chose individual interviews over other qualitative methods. They do however justify their use of some closed questions (to elicit background information and to facilitate comparisons across participants.)	choice for these criteria. Non-participation was not discussed. 21 EMTs, 6 EMCs. The qualitative component of this study followed a quantitative Survey. Participants from the earlier study were asked if they would be willing to participate in qualitative interviews. Non-participation is not discussed.	Setting for data collection is not stated. The authors give examples of the topics discussed during the interview process. The interview schedule used was created with the help of a literature review and the findings from the quantitative component of the study. No justification for the choice interview method is given. The interviews were audio recorded and transcribed.	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	No mention of informed consent, ethical approval or methods to ensure confidentiality.	consistently emodded within the authors' interpretations and contradictory atta are taken into account. The authors are transparent about how the person and contradictory attained to the authors are transparent about how the person and contradictory attained and code by both authors in orter in ensure good reliability. It is not clear how the themes were derived from the data of the authors don't critically evaluate their own role in the analytic process. Contradictory atta are taken into account for example when a triving examples of posicipant quotations with conflicting attitudes. The osearchers don't critically examine their own role bufficient data are presented to support the findings.	Findings are presented as themes. For each theme, a range of relevant quotations are provided to support this theme. Credibility of findings is not discussed.	The authors make recommendations to police organisations for post critical incident support for staff.
Police officers, mental (ill-) health and spoiled identity Bullock et al. 2018 ⁵⁹	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	Researchers justified their use of telephone interviews: '. While telephone interviews are often depicted as a less attractive alternative to face-to-face interviewing, telephones may allow respondents to feel relaxed, more able to disclose sensitive information and there is little evidence that they produce lower quality data '.	52 police officers, two police staff, four Police Community Support Officers (PCSOs) (four) and one special constable. Participants were recruited from six police constabularies in England and Wales. 'Individual participants were identified by virtue of their contribution to an online survey on the nature of work-related injury in which they identified themselves as willing to participate in a full-length interview'. This study is part of a wider project. Non-participation was not discussed.	The researchers explain in detail how the telephone interviews were conducted. Open questions were asked by the participants. Saturation of data is not discussed. 'All interviews were digitally recorded, professionally transcribed and anonymized. '	The researchers acknowledge that the nature of the interview is sensitive, and that the nature of telephone interviews would make participants more comfortable disclosing such information.	'The nature of the interviewing was inevitably sensitive and mechanisms were put in place to mitigate that, for example, interviewees were provided with the contact details of sources of support.' There is no mention of ethical board approval, informed or methods to protect patient confidentiality.	The authors of Braun and Clark's thematic analysis approach, and give a very brial overview of the approach but they do not give examples of how themes were derived from the data. The researchers dibot critically examine their Non role. Sufficient data the presented to exprort the findings, and contradictory data are taken to account. Data Suturation is not discussed.	The findings are presented as themes. For each theme, the authors use participant quotations as well as relevant literature to discuss the context surrounding the quotations. No efforts to enhance credibility are discussed.	The authors make recommendations to police organisations based on their findings surrounding stigma. No recommendations for research are made.

							The authors describe the		
'You see a baby die and	Aims of study are clearly	The authors justify their	25 EMTs. Participants	Interviews were conducted	'The research team	Confidentiality was	The authors describe the	Findings are presented as	The authors make four
you're not fine:' a case	stated, and their	choice of in-depth	were recruited from one	in a private space of the	consisted of a female	guaranteed by the authors	process of constant	themes and sub-themes.	detailed recommendations
study of stress and coping	importance justified.	interviewing technique as	county in a Western state.	participant's fire	Caucasian professor who	as the transcripts were	comparison apalysis. Two	'To enhance credibility,	to the specific EMS
strategies in volunteer	Qualitative methodology is	they 'hope to gain a	It is not clear how the	department. Justification	holds a doctorate and a	anonymised. There is no	researchers in pendently	member validation was	organisation with which
emergency medical	appropriate due to nature	deeper understanding of	participants were selected,	for choice of interview	male Caucasian	mention of ethical board	read all the transcripts,	performed in	the study was involved.
technicians	of the aims, which is to	the lived experiences of	and non-participation is	setting was not provided.	undergraduate student with	approval or informed	and collaborated to discuss	which a summary of	The authors also make
Folwell et al. 2018 ⁵⁵	explore subjective	voluntary EMTs'.	not discussed.	In-depth interviews were	three years' experience as	consent.	findings. The thors are	findings and initial	recommendations for
	experiences in detail.			performed with	a volunteer EMT. While		very transpare about the	interpretations of data	future research.
				participants, using an	some of the interviews		analytic process	were given to five	
				interview guide. This was	were conducted by both		Contradictory data were	participants to confirm the	
				chosen to "gain a deeper	members of the research		discussed, such in the	researchers accurately	
				understanding of the lived	team, most interviews		example of panticipants	depicted viewpoints and	
				experiences of voluntary	were conducted by the		discussing the one and cons of CISD. Outflicient	experiences. To	
				EMTs". Saturation was	volunteer EMT'. Other		data and masses and to	enrich transferability, we	
				reached by the end of the study. Interviews were	than providing these details, Researchers do not		data are presented to	provided detailed descriptions of participants	
				audio recorded and	critically examine their		support the ingings.	and research	
				transcribed.	role, potential bias and		<u>d</u>	sites. To improve	
				iranscribed.	influence of research		ä	dependability, we used the	
					question formulation or			same protocol for each	
					data collection.) š	interview and documented	
							⊒ ב	the process of data	
							ਰੋ	collection and analysis. To	
							 }	address confirmability, we	
							l ă	used	
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							Pe	participants to support the	
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		For	peer review only	- http://bmiopen	.bmj.com/site/ab	out/quidelines.x	·		
					,	5			

Supplementary File 2:

ENTREQ checklist (Enhancing transparency in reporting the synthesis of qualitative research)⁸³

No	Item	Guide and description
1	Aims	To synthesise the evidence on:
		1. The factors that contribute to mental health recovery as expressed by psychologically distressed
		emergency service staff following occupational critical incident exposure
		2. The barriers to and facilitators of mental health help-seeking behaviour among psychologically
		distressed emergency service staff
2	Synthesis Methodology	Thematic synthesis
3	Approach to searching	Pre-planned comprehensive search strategies, combining database searching with manual search
		methods.
4	Inclusion criteria	Articles were eligible for inclusion provided they met the following criteria:
		(1) Participants were frontline ESWs; (2) There must be a focus on work-related psychological
		distress; (3) Include primary qualitative interviews, focus groups or observational methods; (4)
		Participant attitudes towards: a) pro-active action aimed at improving mental health after experiencing
		a traumatic event OR b) factors which emergency service workers find helpful or unhelpful for their
		mental health while experiencing work-related psychological distress, are explored; (5) Published in
		English and peer-reviewed.
5	Data sources	OVID MEDLINE, EMBASE, PsycINFO, SCOPUS. To identify articles missed in the electronic database
		search, the following methods were also employed:
		-Using 'related article' feature (when available).
		-Searching the titles of included studies in google scholar for citation tracking purposes.
		-Manual searching of the references of relevant studies (reference chaining).
		Grey literature was searched during background research for context but not to locate eligible studies.
6	Electronic search strategy	The two combinations of search criteria (see Appendix A) were entered into each database. Figure 1 provides an overview of the database search.
7	Study screening methods	The elegibility criteria were applied against the titles of the database search results by one reviewer
		(NA). The full text of studies with potential relevance was screened. (Figure 1)
8	Study characteristics	Study characteristics are presented in Table 1.
9	Study selection results	PRISMA guidance was used to construct a flow diagram displaying the database searching process
		(Figure 1). Of the 13381 records identified once duplicates were removed, the full text of 42 article
		were screened, and 24 studies were included in this qualitative synthesis.
10	Rationale for appraisal	All potentially relevant studies were quality appraised by one reviewer (NA), using the Critical
		Appraisal Skills Program (CASP) guidelines. Studies meeting less than 5 criteria were then subject to
		further scrutiny, in the form of five quality appraisal prompts developed by Dixon-Woods et al. (see
		'quality appraisal' section). This second stage of appraisal was carried out independently by by RR, M
		or JW, and decisions relating to the inclusion of these studies in the review were made following
		thorough communication between reviewers and referring to pre-determined quality prompts.
11	Appraisal terms	Critical Appraisal Skills Program (CASP) guidelines and quality appraisal prompts (see 'quality
		appraisal' section) were used to quality appraise all included studies.
12	Appraisal process	Quality assessment was carried out primarily by one reviewer (NA), with independent verification from
		RR, MB or JW for ambiguous studies.
13	Appraisal results	CASP scores of included studies are provided in Table 1. Full study quality assessments are available
		for review if required.
14	Data extraction	A data extraction template (Appendix B) was created for this review by one reviewer (NA). Sections
		for first, second and third order constructs are included in the extraction template, which was filled
	1	1

	T	
15	Software	N/A.
16	Number of reviewers	Two reviewers were involved in the coding and analysis (NA, RR).
17	Coding	One reviewer carried out line-by-line coding (NA). RR aided with the grouping of codes, and assisted
		with the generation of descriptive themes.
18	Study comparison	During primary readings of the studies, overarching concepts relating to the research aims were noted.
		The generation of new codes altered pre-existing codes.
19	Derivation of themes	Thematic generation was carried out in correspondence between two reviewers (NA and RR), and was
		grounded in the extracted data. This was an inductive approach.
20	Quotations	Appendix C provides example literature quotations from included studies which were used to construct
		themes.
21	Synthesis output	This qualitative review generated 14 descriptive themes. These are grouped into either 'factors
		contributing to mental health recovery post traumatic incident exposure' or 'factors influencing mental
		health help-seeking behaviour'. Table 2 presents a summary of themes. These descriptive themes
		were applied to the context of UK emergency service organisations to produce implications for
		practice and research.
		practice and research.

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The barriers and facilitators to help-seeking and psychological protection of trauma-exposed emergency service staff: A qualitative evidence synthesis

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The barriers and facilitators to helpseeking and psychological protection of trauma-exposed emergency service staff: A qualitative evidence synthesis

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Abstract

Objectives

To identify factors and contexts contributing to mental health protection and recovery of emergency service workers (ESWs) following exposure to occupational trauma, and barriers and facilitators to mental health help-seeking behaviour among trauma-exposed ESWs.

Background

ESWs are vulnerable to mental ill health, with occupational exposure to trauma a major contributing factor. This has implications for workforce sustainability. Types of

organisational interventions offered to trauma-exposed ESWs are inconsistent across the UK, with uncertainty around how to engage staff.

Design

Four databases (OVID MEDLINE, EMBASE, PsycINFO and SCOPUS) were systematically searched from January to March 2020., with citation tracking and reference chaining. A qualitative evidence synthesis was carried out on 24 qualitative studies. A modified Critical Appraisal Skills Programme tool and quality appraisal prompts were used to identify fatally flawed studies. The PerSPEcTiF framework was used to define eligibility criteria, and data was extracted using a customised extraction table. Drawing upon the principles of thematic synthesis, a qualitative synthesis was performed based on line-by-line inductive coding of included studies.

Results

Fourteen descriptive themes emerged from this review, categorised into two overarching constructs: factors contributing to mental health recovery (such as the need for downtime, peer support and reassurance) and factors influencing help-seeking behaviour (such as

stigma, the content, form and mandatory nature of interventions, and mental health literacy (i.e. emotional awareness, education).

Conclusion

The juxtaposition of ESW perceptions and organisational priorities highlighted by this review provide new insights about the applicability and usefulness of trauma interventions.

Following traumatic exposure, ESWs appear to benefit from recovery time and informal support from trusted colleagues. Facilitation of ESWs' ability to detect and respond appropriately to trauma-related emotional reactions may have organisational benefits. A culture which encourages help-seeking and open dialogue surrounding mental health, and discourages stigma is pivotal to bolster mental health recovery.

Keywords: Qualitative research, mental health, emergency responders, thematic synthesis, psychological trauma, qualitative evidence synthesis

Strengths and Limitations

With respect to reflexivity, the analysis constitutes multiple perspectives on the topic, compromising of a primary care and ambulance clinician, a medical student, and two applied health researchers. Only English language studies were included, and despite not excluding studies on the basis of age or setting location, all but one of the studies⁶⁷ were set in socioeconomically western countries; therefore findings may not be transferable to all countries. Study quality varied significantly, with research design commonly being inadequately explained. Only one reviewer performed the initial screen of studies, possible allowing for selection bias, however a second reviewer was recruited to independently assess potentially relevant studies against eligibility criteria.



Introduction

Emergency service workers (ESWs) consisting of members of the emergency medical services (EMS), the fire service and the police force, consistently experience poorer mental health outcomes when compared to the general population. While subtle differences exist

between occupational groups within emergency service organisations (ESOs), ESWs, also referred to as first responders, experience disproportionately higher rates of post-traumatic stress disorder (PTSD), anxiety, depression and psychological distress. 1-5 Suicide attempts by ESWs are considerably more prevalent than the estimated rate of 0.5% in the general population.⁶ Exposure to traumatic events accounts for higher PTSD rates in the ESW cohort,² and is the second most commonly reported cause of poor mental health among UK ESWs in a 2019 survey, following excessive workload. This review will consider the terms 'traumatic incident/event' synonymously with the term 'critical incident', which is defined as: 'any event with sufficient impact to produce significant emotional reactions in people now or later', as described by Mitchell and Everly. 8 The increased incidence of PTSD in ESW populations^{1,2} is important to appreciate as PTSD is a risk factor for suicidal ideation and risky behaviours in civilian and military populations, 9,10 and increases suicidal risk in ESWs. 11,12 The wider impacts of mental ill health among ESWs include high rates of absenteeism and presenteeism, resulting in significant costs to emergency service organizations.13

ESOs employ a variety of programmes to prevent the development of mental ill health in trauma-exposed staff, of which main categories include stress management, psychotherapy

and health promotion. 14 Psychotherapy in the form of single-session session stress debriefing has widespread historical and current use in ESOs¹⁵⁻¹⁷, but by the early 2000s, a substantial body of evidence had emerged highlighting its ineffectiveness at preventing PTSD, as well as potentially exacerbating symptoms by interfering with natural coping mechanisms. 15,16,18-20 The following two interventions are emerging among UK ESOs, and are examples of prevention strategies hoped to replace traditional debriefing methods. Trauma Risk Management (TRiM) is a peer support system, delivered by trained volunteers belonging to the organisation,²¹ who psychologically risk assess individuals exposed to traumatic events.^{22,23} The evidence surrounding TRiM's impact on users' mental health outcomes or positively altering mental health stigma is inconclusive. ²³⁻²⁶ Schwartz rounds are a 'cultural change initiative' also emerging in the UK,²⁷ which allow multidisciplinary healthcare staff to share and discuss 'non-clinical aspects (e.g. psychosocial, ethical and emotional issues),²⁸ and as of May 2020 have been adopted by four UK ambulance trusts.²⁷ Schwartz rounds are reported to improve staff psychological wellbeing and increase 'empathy and compassion for colleagues', ²⁹ although have not been formally evaluated. Other interventions provided by UK ESOs to support the emotional wellbeing of ESWs after attending to critical incidents

include counselling and 24-hour helplines,³⁰⁻³⁴ 'defusing' programmes³⁵ and peer support networks.³⁶

Despite the availability of interventions, ESWs experience barriers to mental health care with one third experiencing mental health stigma, a rate that is higher than the general population.³⁷ The purpose of this review is to identify the factors associated with psychological protection of trauma-exposed ESWs, and the mental health recovery of those ESWS experiencing distress linked to critical incidents. This review will also identify the barriers to and facilitators of mental health help-seeking behaviour among trauma-exposed and psychologically distressed ESWs.

By identifying important contextual factors which help and hinder staff when they access support, and illuminating benefits and disbenefits of current organisational interventions, this review aims to offer qualitative insights grounded in the perceptions of ESWs, which may help ESOs in decision-making about psychological support for their staff following traumatic incident exposure.

This review was initiated in collaboration with key ambulance management stakeholders who expressed a need for research to guide decisions about wellbeing interventions for frontline staff, therefore the focus is on ambulance trusts, although the findings will also be of relevance to fire and police organisations.

Methods

Methodology

The analytical technique of thematic synthesis, as described by Thomas and Harden, was used to conduct this qualitative review.³⁸ This technique used inductive line-by-line coding and is focussed around: intervention need, appropriateness, acceptability and effectiveness,³⁹ and is an established method in the field of mental health to investigate barriers to help-seeking, and to synthesise qualitative evidence about participant experiences.^{37,40,41} It is therefore appropriate given that this review's purpose is to inform UK emergency service organisational guidelines. The research question and final search terms were ratified by a

consensus panel of key stakeholders drawn from UK ambulance services. This group contributed to the development and refinement of the review questions, search parameters and application of the review findings. The methods of this review are reported using the ENTREQ framework (Supplementary File 1).

Eligibility criteria

In keeping with recent qualitative review guidance⁴², the PerSPEcTiF framework was used to enhance description of inclusion criteria.⁴³ (Table 1)

Table 1: The PerSPEcTiF question formulation framework⁴³

Perspective	Setting	Phenomenon of	Environment	(Optional	Time/timing	Findings
		interest/Problem		comparison, not		
				applicable)		
Emergency	Emergency	How does the	Poor mental		Following	In relation to
service	frontline	phenomenon of	health outcomes		occupational	the
workers	ambulance,	participant attitudes	and elevated rates		exposure to	emergency
	police or	towards: a) behaviour	of mental health		traumatic	service
	fire service	aimed at improving mental	stigma within the		event(s)	workers'
	work	health after experiencing a	emergency			perceptions
		traumatic event OR b)	services			and
		factors which ESWs find				experiences
		helpful or unhelpful for				
		their mental health while				
		experiencing work-related				
		psychological distress				

Inclusion criteria:

(* indicates further information below)

(1) Study participants were frontline ESWs* (studies with mixed populations of eligible participants were included); (2) There is a focus on work-related psychological distress*; (3) Data collection includes primary qualitative interviews, focus groups or observational methods (this included mixed methods studies with qualitative components); (4) Analysis focussed around participant attitudes towards: a) behaviour aimed at improving or protecting mental health after experiencing a traumatic event OR b) factors which ESWs find helpful or unhelpful for their mental health while experiencing work-related psychological distress, are explored; (5) Published in English and peer-reviewed.

No limits were applied to publication date or study location.

Exclusion criteria:

(1) Due to the unique nature of the traumatic events witnesses in this cohort,⁴⁴ studies investigating a military cohort will be excluded; (2) Volunteer ESWs were not included.

* Emergency service workers' (ESW) constitute of members of the emergency medical services (EMS), the fire service and the police force, and have been chosen based on the similar nature of the traumatic events these groups face. ^{2-4,6} The term 'psychological distress will be referred to according to Ridner's definition (see Appendix A).⁴⁵

Search strategy

Systematic searches of the following four databases were conducted between January and March 2020: OVID MEDLINE, EMBASE, PsycINFO and SCOPUS. The first three databases were searched together using the MEDLINE database. In order to avoid duplicates, the SCOPUS database was then searched with an additional filter to exclude MEDLINE results. Two reviewers (NA and RR) independently reviewed the 42 full text articles assessed for their eligibility criteria, with the aid of RefWorks reference management software. During this process, the two reviewers agreed to exclude 17 studies which did not meet the eligibility criteria. In cases of uncertainty surrounding eligibility criteria, there was a group discussion between all authors. One additional study was excluded on grounds of insufficient study

To identify articles missed in the electronic database search, the following methods

quality; this was agreed upon by all authors. (Figure 1)

were also employed: 1) Using 'related article' feature (when available), 2) Searching the titles of included studies in google scholar for citation tracking purposes, 3) Manual searching of the references of relevant studies (reference mining).

Grey literature was searched during background research for context. Two combinations of search criteria (see appendix B) were entered into each database in order to locate relevant literature relating to help-seeking and mental health recovery. The search terms were developed during a process of trial and error using qualitative guidance, ⁴⁶ other reviews in the field, ^{37,41} and virtual consultations with stakeholders and co-authors.

Quality appraisal

One reviewer (NA) assessed study quality using the CASP qualitative checklist.⁴⁷ Studies scoring less than five were further appraised independently by one of three reviewers (RR,

MB, JW) to determine whether they should be included in this review based on their conceptual richness, drawing upon five quality appraisal prompts as recommended by Dixon-Woods et al.⁴⁸ One study was removed during this approach.⁴⁹ In keeping with this approach, 'signal' (the relevance of papers to the review's aims) was prioritised over 'noise' (*the inverse of methodological quality*).⁴⁸

Data extraction

A customised data extraction template (See Appendix C) was created using qualitative data extraction guidance⁴⁶ and that of a similar review as a template.⁴¹ In keeping with thematic synthesis approach,³⁸ first order constructs (direct participant quotations) as well as the author's interpretations were extracted, in separate sections, to allow for a more comprehensive review.⁴⁶ Following Thomas and Harden,³⁸ all data relevant to the research aims were extracted onto templates by one researcher (NA).

Data synthesis:

The extracted text underwent line-by-line open coding, which allows new codes to emerge from the data, rather than imposing a pre-existing framework onto the extracted data.³⁸ Subsequently, first-level codes were assimilated according to their meanings, similarities and differences. The codes were then arranged in a 'hierarchical tree structure' during which some codes were renamed as new meanings were generated. For example, some quotations initially coded as 'stigma' were later agreed to more appropriately reflect 'macho culture' or 'career concerns', with 'stigma and shame' relating specifically to shaming practices. This inductive process results in 'descriptive themes'. Two reviewers (NA and RR) performed the initial coding process, but grouping into descriptive themes and interpretation of the data involved discussion between all four authors. To enhance transparency, primary quotations used to construct the themes are supplied in Appendix D. In the final stage of thematic synthesis, the descriptive themes were used to address the review questions. This process involves 'inferring' the meaning behind the data; The final result of this process was the translation of the descriptive themes into implications for ESO wellbeing policy practice, which involved roundtable discussion between all four authors.

Results

<<insert Figure 1 here>>

Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.⁴³

Overview of study characteristics

24 studies were included in this review (Table 2). All but two of these studies ^{50,51} employed qualitative methodology only. For these two studies, only data from sections related to their qualitative methodology were extracted. The majority of studies (16 of 24) employed a sample of ambulance personnel ^{50,65} followed by police officers ^{66,69} and lastly firefighters. ^{70,71} The study participants of one study, in addition to ESWs, included participants who did not match the selection criteria ⁷⁰, and two studies included a mix of different types of ESWs. ^{72,73} These studies were still eligible as the participant quotations were labelled with an occupational identifier to make it possible to differentiate between eligible and non-eligible participants. The objectives of studies varied widely in studies in terms of relevance to this review's aims. Ten of the 24 studies included data relevant to post-traumatic incident mental health recovery, ^{51,53,55,58,61,65,73} and one study included data relevant to barriers and

facilitators to mental health help-seeking.⁷² The remaining 13 studies^{50,54, 59,60,62-64,66-71} included data which was extracted for both of these outcomes.

Study quality:

Study quality varied significantly, with data collection, data analysis and discussion of findings being adequately explained in the majority of studies. All studies provided adequate research aims, although fewer than half sufficiently justified the research design. 51,53,55,59, 60,65,66,67,69,71,72 The lowest scoring domains were recruitment and demonstrating reflexivity. In few studies the researchers adequately justified their selection of participants 51,55,57,67,72,73 or critically examined their relationship with participants. 66,58,62,63,66,72,73 Four studies failed to present any ethical considerations. 50,51,64,70

2. Following CASP appraisal, six studies^{48,55,57,61,64,70} initially identified as weaker quality underwent further independent quality appraisal by one of three reviewers (RR, MB, JW), during which process one study was excluded.⁴⁹

The full CASP appraisal table of all included studies is provided in online supplementary file

This qualitative review identified 14 descriptive themes, which are arranged in groups of higher order themes. In turn, these are grouped into one of the following two overarching

constructs: 'factors contributing to mental health protectoin' or 'factors influencing mental health help-seeking behaviour'. Table 3 presents a summary of hierarchical thematic structure.

Patient and public involvement

No patient involved

Table 2: Study characteristics

Title of study (Authors, year)	Quality ranking against CASP criteria	Participants	Study aim(s)	Country	Method of data collection	Analysis method
What makes an incident critical for ambulance workers? Emotional outcomes and implications for intervention. Halpern et al. 2009	5/9	N=60 4 supervisors, 54 front-line ambulance workers	To characterize critical incidents as well as elicit suggestions for interventions	Canada	Focus groups/ individual interviews	Ethnographic content analysis
Police officers' experiences of supportive and unsupportive social interactions following traumatic incidents. Evans et al. 2013	6/9	N=19 Police officers	(1) What are police officers' experiences of supportive and unsupportive interactions following potentially traumatic incidents? (2) Do interactions differ on the basis of the context and source of support (i.e., at work with colleagues and supervisors, or outside of work with family and friends)? (3) How do supportive/unsupport ive interactions facilitate/hinder the processing of traumatic incidents?	England	Semi-structured interviews	Thematic analysis
Interventions for critical incident stress in	6/9	N=60 4 supervisors, 54 front-line	To explore and describe Emergency Medical Technicians'	Canada	Focus groups/ individual interviews	Ethnographic content analysis

emergency medical services: a qualitative study Halpern et al. 2008		ambulance workers	(EMTs) experiences of critical incidents and views about potential interventions, in order to facilitate development of interventions that take into account EMS culture			
Barriers and Facilitators to Seeking Mental Health Care Among First Responders: "Removing the Darkness" Jones et al, 2020	9/9	N=32 Twenty-five (78%) of the participants were active firefighters, 15 (47%) were certified EMTs, and 11 (34.4%) were certified EMTs/ paramedics.	To explore factors that influenced FRs' perceptions of mental health problems and engagement in MH services.	United states	Ethnographic individual interviews	Content analysis
Exposure to human tragedy, empathy, and trauma in ambulance paramedics. Regehr et al, 2002	6/9	N=18 Paramedics	This mixed-methods study attempts to better understand factors that lead to higher levels of distress among paramedics within the theoretical framework of emotional and cognitive empathy.	Canada	Semi-structured interviews	Thematic analysis
The meaning of traumatic events as described by nurse sin ambulance service Jonsson et al. 2003	5/9	N=362 240 EMTs, 122 registered nurses	The aim of this phenomenological study is to uncover the essence of traumatic events experienced by Swedish ambulance personnel.	Sweden	Written reports	Phenomenologic al analysis
Guilt, shame and need for a container: a study of post-traumatic stress among ambulance personnel Jonsson et al. 2004	4/9	N=10 Ambulance nurses and ambulance technicians	The phenomenon approached in this study could be described as 'the way ambulance staff experience and handle traumatic events'.	Sweden	Individual interviews	Descriptive phenomenology
Situation Critical: High Demand, Low Control, and Low Support in Paramedic Organizations Regehr et al. 2007	7/9	N=17 Paramedics	This mixed-methods study involving survey design and qualitative interviews seeks further to understand the factors related to these high levels of occupational stress.	Canada	Long interviews	Constant comparative method
Emergency Medical Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019	8/9	N=17 Paramedics and EMTs	This qualitative study was conducted to increase understanding about the difficulties of responding to pediatric calls and to obtain information about how organizations can better support EMS	United states	Focus groups	Directed content analysis

			providers in managing potentially difficult calls.			
An assessment of the need of police officials for trauma intervention programmes - a qualitative approach. Boshoff et al. 2015	5/9	N=40 Police officials	To conduct a qualitative situational analysis by exploring the experience and specific needs with regards to trauma and trauma intervention of police officials within the North-West Province's specialist units.	South Africa	Focus groups	Thematic analysis
A preliminary investigation of post-traumatic stress symptoms among firefighters Haslam et al. 2003	4/9	N=31 11 firefighters, 8 station officers, 4 sub officers, 4 leading firefighters, 2 fire control officers, 2 area divisional officers	This preliminary study aimed to conduct an in-depth investigation of symptoms cited by fire service personnel and assess potential risk factors for mental health and PTSD.	England	Individual interviews	Thematic analysis
A qualitative study about experiences and emotions of emergency medical technicians and out-of-hospital emergency nurses after performing cardiopulmonary resuscitation resulting in death Fernández-Aedo et al. 2017	4/9	N=13 7EMTs, 6 ambulance nurses	To explore the experiences, emotions and coping skills among emergency medical technicians and emergency nurses after performing out-of-hospital cardiopulmonary resuscitation maneuvers resulting in death.	Spain	Semi-structured individual interviews and focus groups	Thematic analysis
Experiences of and actions towards worries among ambulance nurses in their professional life: A critical incident study Svensson et al. 2008	7/9	N=25 Ambulance nurses	The purpose of this study was to describe critical incidents in which ambulance nurses experience worry in their professional life and the actions they take in order to prevent and cope with it.	Sweden	Semi-structured individual interviews	Structural analysis/Critical incident technique
Exploring the nature of resilience in paramedic practice: A psycho-social study Clompus et al. 2016	5/9	N=7 Paramedics or EMTs	The aim of this study was to explore the question of how paramedics 'survive' their work within the current healthcare climate.	England	Biographical narrative interviews and semi-structured interview with all participants	Thematic analysis
First response emergency care – experiences described by firefighters Abelsson et al. 2019	5/9	N=35 Firefighters	The purpose of this paper is to describe firefighters' experiences of first response emergency care	Sweden	Group interviews	Interpretive qualitative content analysis

Paramedics' experiences with	5/9	N=28 Paramedics	To explore paramedics'	Canada	Focus groups	Inductive thematic
death notification: a qualitative study Douglas et al. 2013			experiences and coping strategies with death notification in the field.			analysis
Peer-support: a coping strategy for nurses working at the Emergency Ambulance Service Carvello et al. 2019	4/9	N=14 Ambulance nurses	The aim of the study is to explore the experiences, the opinions and feelings of emergency medical service nursing staff in relation to the use of the peer supporting model.	Italy	Semi-structured interviews	Not made explicit
Experiences among firefighters and police officers of responding to out-of hospital cardiac arrest in a dual dispatch programme in Sweden: an interview study Hasselqvist-Ax et al. 2019	8/9	N=22 10 police officers, 12 firefighters	The aim of this interview study was to explore firefighters' and police officers' experiences of saving lives in OHCA in a dual dispatch programme.	Sweden	Individual interviews	Critical incident technique
Working in prehospital emergency contexts: Stress, coping and support from the perspective of ambulance personnel Oliveira et al. 2019	8/9	N=14 Ambulance personnel	The purpose of this paper is to explore, from this group perspective, sources of stress, coping strategies and support measures	Portugal	Semi-structured interviews	Thematic analysis
Exploring paramedic communication and emotional expression in the workplace after responding to emergency calls Drewitz-Chesney et al. 2019	7/9	N=8 Paramedics	The study aim was to learn about peer communication and emotional expression between paramedics in the workplace, after they respond to calls.	Canada	Semi-structured individual interviews	Constructivist grounded theory
Mental Health in the UK Police Force: a Qualitative Investigation into the Stigma with Mental Illness Edwards et al. 2020	6/9	N=5 Police officers	The study aims to explore institutional negativity and stigma in the police force towards mental ill health	United Kingdom	Semi-structured individual interviews	Thematic analysis

Living in Critical Times: The Impact of Critical Incidents on Frontline Ambulance Personnel: A Qualitative Perspective Gallagher et al. 2007	2/9	N=27 21 EMTs, 6 EMCs	The principal aim of this second stage of the study was to ascertain, using qualitative methods, the impact of CIs on frontline staff by allowing them to tell their own stories.	Ireland	Individual interviews	Thematic analysis
Police officers, mental (ill-) health and spoiled identity Bullock et al. 2018	5/9	N=59 52 police officers, 2 police staff, 4 PCSOs, 1 special constable	The processes through which some police officers with mental ill-health experience stigmatization.	England and Wales	Phone interviews	Thematic analysis
'You see a baby die and you're not fine:' a case study of stress and coping strategies in volunteer emergency medical technicians Folwell et al. 2018	6/9	N=25 EMTs	This study explores the lived experience of ESP involved in unsuccessful pediatric resuscitation efforts and how this experience affects them professionally and personally.	United States	Individual interviews	Constant comparative analysis
Гable 3: Sum	mary of Th	nemes				

Table 3: Summary of Themes

Domain	Higher level theme	Descriptive themes
Factors contributing to	Organisational	-Time out/Downtime
mental health protection		-Supervisor
1		-Official peer support network

	Informal support	-Colleagues and family -Regular partner -Reassurance and validation					
Factors influencing help-	Nature of intervention	-Mandatory vs non-mandatory					
seeking behaviour	delivery	-Shared experiences with intervention provider					
	Stigma as a help-seeking	-Macho culture					
	barrier	-Stigma and shame					
		-Career concerns					
		-Confidentiality concerns					
	Mental health literacy	-Emotional awareness					
	· O	-Education and stigma					
1. Factors contributing to mental health protection							

The following themes describe factors which participants attribute to having a direct influence on their mental health protection or recovery following traumatic incident exposure.

Organisational

Three themes were identified as being directly linked with systems put in place by the organisations employing ESWs, and represent opportunities for mental health support following trauma exposure over which ESOs have complete control.

Time-out/Downtime period

A 'time-out' or 'downtime' period refers to a period of time following a stressful call in which ESWs are temporarily placed off duty, the availability of which was inconsistent across the studies. ESWs working in organisations in which they were offered downtime by their supervisors following certain calls reported that these breaks, ranging from 30 minutes to two hours, ^{53,56} were essential in order to allow them to 'decompress' in preparation for the remainder of the shift. ^{53,54} ESWs found particular comfort in casual conversation with their colleagues during this time, which did not necessarily relate to the previous call. ⁵³ During such discussion, humour could be employed by the group as a method of distraction and off-loading. ⁵⁹ While the majority of ESWs preferred to be in the company of colleagues during

this time, 55,59,60,63 some individuals chose to make use of organisation-provided exercise equipment in order to de-stress.65

When time-out opportunities were unavailable, ESWs describe rushing into the next call without having psychologically processed the previous call.⁵¹ In such circumstances, paramedics reported difficulty giving their full attention to the next call, limiting their ability to provide life-saving care. 64 Contrary to the above findings, one ambulance worker preferred to be dispatched to another call immediately following a stressful call, due to the distraction this provided.⁵³

Supervisor

ESWs have supervisors/line managers, whose roles include acting as a point of contact after a traumatic incident. In an ambulance setting, paramedics were appreciative of the 'genuine concern' shown by their managers or supervisors following a traumatic call.⁵² Concern was commonly expressed by asking paramedics how they were feeling, and providing them with an opportunity to talk. 52,53 Not all ESWs want to be approached by their supervisor immediately following the call, as illustrated by the following quote from a paramedic:

'I don't want you to come up and get in my face and say, are you okay? Just leave me alone. Okay. Ask me in a couple of days, am I okay with the call, sort of thing.'53

Occasionally supervisors were responsible for taking an ambulance crew off duty after a call.⁵³ Even if downtime opportunities were available upon individual request, paramedics described not making use of the opportunity unless suggested or requested by the supervisor.⁶⁰ Conversely, a supervisor's influence may also dissuade paramedics from requesting temporary downtime, especially for newer paramedics who were fearful of any repercussions linked to the perceived inability to cope.⁶⁰

Paramedics described unsupportive supervisor responses, such as not recognising the traumatising effect of an incident, applying disciplinary pressure after complicated calls,⁵¹ or showing a lack of concern for paramedics' mental wellbeing.^{53,62}

Official peer support network

The majority of ambulance nurses taking part in one study were in favour of the existence of peer supporters within their organisation; who the nurses described as being able to 'understand', due to their common experiences. 61 Despite the apparent popularity of the service in this organisation, peer support networks in other organisations were rarely used, 59,64 with defusing occurring 'naturally within the halls' instead. 59 Participants in two studies expressed a hesitancy to make use of peer support opportunities for fear of being judged by colleagues as 'weak'. 61,64 Other concerns centred around the competence of peer supporters, their ability to maintain confidentiality, 61,64 and fear of overwhelming the colleagues delivering the support. 61

Informal support

In contrast to organisational factors, these three themes describe how informal social factors influence ESWs' mental health protection and recovery. While discussion with colleagues is frequently discussed, this represents informal discussion and is therefore beyond the direct control of ESOs.

Colleagues and family

ESWs reported that they found it useful to talk with someone in an informal manner.

^{53,54,55,57,59,60,61,63,64,66,68,70,71}One firefighter described a need to 'vent a backpack', which fills up after each call;⁷¹ suppression could be harmful in the long term as mental health conditions remain unrecognised.⁶⁸ The main providers of such informal support were family members and work colleagues, but there were mixed findings in terms of preferences for support.

Many ESWs reported turning to their family members as a primary source of emotional support following difficult calls, ^{66,53,72,50,56,70,59} who were capable of 'selfless listening' without offering judgement, 66 and with whom ESWs feel more comfortable sharing emotional vulnerability with family members than with colleagues.^{53,66} However, a number of ESWs reported avoiding talking to their family members about stressful calls out of a wish to protect them from the trauma they experienced, ^{56,58,59,66,70-72} although this did not apply to family members with a first responder/healthcare background, who were judged to be able to 'understand' ESWs' traumatic experiences. 57-59 For similar reasons, ESWs were willing to talk to certain colleagues about traumatic calls; The informal sharing of vulnerability was reserved for colleagues with whom ESWs shared a bond of trust^{57,58,63,66} and for those more likely to empathise and understand the emotional impact of the event. 50,53,55-58 Sharing experiences with trusted colleagues provided an opportunity for reflection and to hear

different interpretations of the event. The risks of disclosure included reliving distressing events, and potential having feelings invalidated when partners felt differently about the event.⁵⁸

Regular partner

ESWs described how having a regular work partner helped their ability to process traumatic events encountered on the job. 51,53,63,72A trusting relationship between partners facilitated comfortable sharing of vulnerability following traumatic calls. 53,63 Having shared the experience, partners could emotionally support colleagues by allowing them to talk about the call and provide reassurance. 51,72 Having a regular partner could however be a negative influence in the case of an unsympathetic relationship, such as partners who respond insensitively to any disclosure of vulnerability. 63 Due to the potential stigma arising from the disclosure of vulnerability within earshot of colleagues, the process of 'defusing' between partners, following a call, commonly takes place within the private space of the ambulance, when returning to base and while awaiting the next call. 63

Reassurance and validation

Reassurance, provided by colleagues indicating that they would have acted in the same way^{52,54,58} or by receiving praise for their actions from their supervisor,⁵³ were valued by ESWs following traumatic incidents, especially those involving fatalities.⁵³ Reviewing the technical aspects of calls with other ESWs provided reassurance that the 'final outcome' was unavoidable.⁷¹ In cases of suicide, learning about the preceding circumstances could provide closure for some ESWs.⁵³ Following fatal accidents, paramedics also described needing to visit family members in hospital, or to attend funerals.⁵²

2. Factors influencing help-seeking behaviour

The following themes reflect the barriers and facilitators to help-seeking following occupational traumatic exposure.

Nature of intervention delivery

Two themes elaborate on how the method in which a formal intervention is offered can influence attitudes towards engagement.

Mandatory vs non-mandatory

The decision to employ optional or mandatory organisational mental health support for ESWs following traumatic calls was raised in several of the studies and often depended on the timing of delivery following the incident. Some participants resisted mandatory organisational mental health support following traumatic calls; police officers expressed a need to 'feel in control of the decision to talk' due to the stigma surrounding any disclosure of vulnerability. 66 Mandatory interventions for ESWs before they are ready to talk could lead to a rejection of the intervention, 53,60 as illustrated by the following paramedic quote:

'My emotions are none of your business and if I wanted to share my emotions with you, I'm going to share [them] with someone I trust...⁶⁰

Others however believed mandatory interventions would reduce stigma associated with their use, 60,66 and prevent delays to help-seeking due to the stigma associated with disclosing vulnerability. 53 Police officers who were initially reluctant to participate felt 'calmer' and expressed gratitude after attending a mandatory counselling service. 66 EMS staff in one study

suggested limiting mandatory support to certain types of incident, such as those involving children.⁵³

Shared experiences with intervention provider

Therapists with a background in the emergency services or the military, or trained peers, were preferred by ESWs,⁷² because of the belief that they are more likely to 'understand' their problems and experiences.⁶⁰ This finding was observed across the emergency services:

'Many [participants] also approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member.'72

Stigma as a help-seeking barrier

'Macho' culture

Stigma associated with the disclosure of emotional vulnerability related to traumatic calls, and mental health issues. 50,53,54,59,60,62,63,64,66,68,70 was identified across the emergency services. A

'macho' attitude and culture acted as a key barrier to disclosure where there was an expectation to 'deal with it'.63,68 Disclosure of vulnerability in such a culture was perceived as a weakness and responders were viewed as unable to cope with the demands of the job as first responder.53,59,60,63,66,69,70 Revealing one's feelings was perceived to be emasculating and prevented ESWs from talking about their feelings and seeking support,60,66,70 as demonstrated by this quote from a police officer:

'I think there's a real element of machismo and masculinity in the police force and it's a bit, sort of a faux pas to admit that things have really affected you ... If I'd have come out and said 'ah you know, that really affected me badly, let's go and sit down and have a cup of tea and talk about it' I think you're straying into pink and fluffy territory there ... saying 'that made me feel sad' is a bit too far'.66

Stigmatising attitudes held by senior organisational members were influential as they prevented ESWs from contacting their supervisors to seek support.^{66,69} Discussing stress in this culture was described as 'taboo'⁶⁴ so ESWs reported often avoiding asking their colleagues about their emotions following traumatic calls;^{60,62} police officers described how

'tough' colleagues working in such a culture have died by suicide.⁶⁸ Some organisations described a contrasting culture in which openness about emotional vulnerability was regarded as a strength.⁷¹

Two studies identified a connection between elements of the 'macho' culture described, and the gender of ESWs. Swedish ambulance nurses reported that organisations where there was a higher proportion of women fostered a culture of openness with respect to sharing vulnerability.⁵⁰ Of a small sample of seven paramedics, Clompus et al. noted that female participants were more likely to have made use of formal mental health support mechanisms.⁵⁹ The authors attribute this to 'masculinised paramedic culture'.⁵⁹

Stigma and shame

This review identified that the fear of being shamed by being labelled as 'malingerers' 68 or 'the lazy and the lame' 69 resulted in presenteeism when officers remained on active duty although mentally unwell. Another aspect of mental health stigma is the belief that affected individuals are less competent in their responsibilities as an ESW, as well as being unreliable. 69 Police

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officers described a common belief that 'you're on your own' working a shift with a colleague who has been open about the emotional impact of traumatic calls.⁶⁶ ESWs who have been open about their mental health diagnoses describe being labelled as 'mad'⁶⁷ or a 'crazy guy'⁷²; Such attitudes may result in shame and the avoidance of help-seeking.

Career concerns

Four studies report that police officers delay help-seeking for mental illness due to concerns about the perceived impact of disclosure on their careers ⁶⁶⁻⁶⁹ Officers believed that being labelled with a mental health condition would obstruct career progression. ⁶⁷⁻⁶⁹ Officers feared being removed from 'public-facing operational roles', and/or feared a reduction in pay which related to being removed from frontline duities. ⁶⁸ Fear of involuntary dismissal due to disclosure and help-seeking was also reported by study participants from the fire service. ⁷⁰

Confidentiality concerns

Concerns regarding confidentiality were a barrier for ESWs to formal and informal help-seeking behaviour. Formal support services were viewed with suspicion by police officers ⁶⁷ while other officers felt they might be monitored or labelled as 'weak' if they sought referral

to wellbeing services.⁶⁶ Concerns about confidentiality were also raised by firefighters, who therefore requested preference for an anonymous counselling service outside of the brigade.⁷⁰ In the emergency medical services, EMTs expressed concerns about loss of confidentiality through the organisation-provided peer support network;⁶⁴ similar concerns were expressed by EMTs towards critical incident stress debriefing (CISD).⁶⁵ There are also perceived risks of confidentiality breaches in informal settings, as described by one paramedic:

I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judged as weak or you might get fired.⁷²

Confidentiality concerns could also indirectly influence help-seeking; ambulance supervisors wishing to put their crew on a time-out after a traumatic call can be dissuaded by knowing this information could become public knowledge among the dispatchers.⁵³

Mental health literacy

Emotional awareness

Participants and authors of the included studies recognised a need for more training and education about mental health related issues for ESWs and family members and supervisors, who may be in a better position to detect behavioural changes and therefore facilitate helpseeking. 52,53,64,72 Such education should focus on increasing ESWs' ability to detect emotional changes within themselves, which could facilitate help-seeking behaviour. 52,64,64,67,72 ESWs expressed a desire to be informed about the types of emotions which could be triggered by work-related traumatic incidents, ^{52,64} which may reduce shame associated with help-seeking. 72 Studies revealed that an inability to recognise milder mental health symptoms acted as a barrier to help-seeking, with participants writing them off as being 'grumpy', 68 and not recognising and admitting to emotional distress. 52 Additionally, participants were sometimes unaware of the support services available to them, 63,67,72 and were unaware of the benefits of seeking help.⁷²

Education and Stigma

While stigma may indirectly change through improving general mental health awareness, authors also emphasised the value of education to reduce organisational stigma.⁵³ ESWs recommend such education to be delivered regularly in 'brief and efficient' classes of small groups by a peer from outside of the organisation.⁷² Having an awareness of work-related mental health problems among colleagues appeared to be an important facilitator of help-seeking.^{69,72} Experienced ESWs were regarded as being influential by giving permission to other responders to 'open up'.⁷¹ Police officers in one organisation therefore advocated for mental health 'champions'; colleagues, preferably leaders, who could model vulnerability by openly disclosing their mental illness and work-related distress.⁶⁹

Discussion

This review synthesised 24 primary studies investigating ESW attitudes to help-seeking and mental health protection and recovery following trauma exposure. The synthesis generated 14 themes relating to 'factors contributing to mental health protection after traumatic incident exposure' and 'factors influencing mental health help-seeking behaviour'. Despite being grouped separately for increased clarity, these overarching constructs are interconnected.

Both constructs explore the influence that senior organisational members have on the mental health on ESWs within their organisation. The influence could be positive, such as delivering educational sessions regarding organisational mental health stigma. Contrary to this, ESWs could be discouraged from contacting their supervising officer to seek mental health support, or request temporary downtime, depending on the supervisors' perceived attitude to such issues. Another interconnecting area relates to the themes of 'macho culture' and 'stigma and shame', as these stigmatising attitudes contribute towards a hesitancy to use official peer support networks.

Help-seeking: culture/stigma

The findings of this review support quantitative findings that the fear of a breach in confidentiality in attending mental health services, and the concerns about negative career repercussions, pose significant stigma-related barriers to help-seeking for ESWs.³⁷ This is important as any delays in help-seeking can compound or exacerbate mental ill health.^{74,75} Concerns raised by ESW responders about the impact of mental health disclosure on career progression, professional identity and competence have also been found in military personnel.^{37,41,66,76,77}

Expressing emotional vulnerability, being labelled with a mental health condition and seeking help was equated with a perception of weakness, which contributed to a 'macho' culture. Similar masculinised social norms have been described in the military, ^{23,77} which is male dominated with high rates of mental health stigma.³⁷ There are, however, many other similarities between the two settings which are likely to be influential, such as 'norms and values that place a premium on self-reliance in the face of obstacles'.³⁷ Furthermore, these findings may reflect evidence that females are more likely to seek help about their mental health, 78 and correlates with the literature suggesting that males in male-dominated professions display reduced mental health related help-seeking behaviours, 79 and increased suicide rates. 80 Notably, females had a reduced risk of suicide in male-dominated professions, but a slightly increased risk in female-dominated professions, 80 highlighting the complexity of using occupational gender ratios to predict mental health help-seeking behaviours and mental health outcomes. Occupations dominated by hyper-masculine stereotypes may also disadvantage men who do not identify with these values, therefore discouraging the very demographic who would challenge them.⁸¹ Recruiting a more diverse, emotionally literate and aware workforce, with more women may challenge macho work cultures which prevent ESWs from disclosing their vulnerability.⁸¹

This review's finding of anticipated stigma acting as a help-seeking barrier, is supported by the findings from a systematic review which found that *'stigma can potentially lead to delayed presentation in mental health care'* for ESWs,³⁷ and as well as negatively influencing help-seeking in civilian populations.⁷⁶ These findings have also been demonstrated in a qualitative review of a military setting.⁴¹

The findings of this review in terms of attitudes to mental ill health are consistent with Goffman who argued that stigma is defined in and enacted through socially constructed 'norms'. The 'norms' of what is stigmatising and what isn't are socially constructed within a large variety of contexts and has the potential to 'shift'. 82 An effective way of challenging stigma associated with mental illness and changing negative perceptions is through a strategy of increasing contact .23,83-85 In order to effectively counter stigmatising attitudes towards mental health, contact should be delivered in the context of the following five factors: 85 equal status, the opportunity for individuals to get to know each other, information which challenges negative stereotypes, active co-operation and pursuit of a mutual goal. Such approaches and factors could be employed to tackle the stigma and culture which prevent

ESWs from seeking help. Elements of these factors can be recognised in organisational strategies such as Mental Health Champions and Schwartz rounds (see below).

Help-seeking: Education

This review identifies a demand for improving the mental health literacy of ESWs and describes the type of education ESWs believe would be appropriate. Mental health education has been shown to be effective at changing attitudes towards mental health disorders when aimed at large populations, smaller at-risk groups or at the individual level. 86,87 Anti-stigma education was introduced in UK emergency services as part of the 'Blue Light Programme', 7 and demonstrated that achieving anti-stigma change at the employee level requires sustained education efforts over a number of years. 7

The literature suggests that certain types of events, such as paediatric fatalities, events involving multiple casualties or suicides, have a higher traumatising potential than others. ^{50,70,88} The evidence suggests however that the process of traumatisation among ESWs is highly individual, relating to 'personal history, situation, and perspective' of the exposed individual, ⁶⁵ and ESWs can experience trauma in different ways depending on how they contextualise the victim. ⁵⁰ Questionnaires taking into account individual factors, such as the

ESW's 'state of mind' preceding the event, are therefore a useful resource for predicting peritraumatic distress in exposed individuals.⁸⁹

Mental health protection: Social support and downtime

Review participants identified the importance of social support following exposure to traumatic incidents, in consistence with the wider literature. ^{25,41,90,91} Downtime was positively valued by ESWs who had experienced it, yet is not commonly granted to ESWs in practice. ^{91,92} The types of mental health outcome affected by post-incident downtime and extent of its influence is disputed. Carlier et al. identified 'insufficient time allowed by the employer to resolve the trauma' was correlated with higher PTSD scores in police officers three months post-trauma, but not at 12 months. ⁹³ Having insufficient recovery time following traumatic calls has been correlated with higher emotional exhaustion ⁹⁴ and psychological distress. ⁹⁵ These results are in contrast with the findings of a cross-sectional quantitative survey of the psychological consequences of downtime in 217 ambulance workers, which revealed increasing periods of downtime, up to and including one day, to be

significantly associated with lower depression scores, but not with symptoms of 'post-traumatic stress, burnout and stress-related physical symptoms'.⁹⁶

Application of review findings to organisational interventions, policy and research

Our findings have implications for three organisational interventions which are in use or

available for use within the emergency service organisations. These interventions have

particular relevance in the context of this review due to their shared potential to alter

organisational mental health stigma, which this review identified as a barrier to help-seeking.

1) Trauma risk management (TRiM)

Consistent with qualitative findings of navy personnel regarding the implementation of TRiM, ⁹⁷ this review identified a perception among ESWs that peer-support programs are relevant and suitable for their needs, as well as concerns regarding confidentiality and competence of practitioners of peer support programs. Peer supporters are not however regarded as possessing the same professional

competence/credibility of a professional mental health professional. Of note, while review participants expressed concerns about being judged for being perceived as 'weak' by peers in a peer-support system, such a concern was not detected among naval officers towards TRiM,⁹⁷ despite widespread stigma towards help-seeking and mental health issues which exists in the military.⁴¹

2) Mental Health Champions

This review identified that awareness of colleagues' mental health challenges could be an important facilitator for help-seeking. The 'Blue light champions' role⁹⁸ therefore appears to be a potentially effective method of improving attitudes, although quantitative evaluation linking these roles with ESW mental health outcomes and culture change is lacking. Staff satisfaction surveys of these roles reveal a lack of support from management and not having sufficient time available to dedicate to the role.⁹⁹

3) Schwartz Rounds

In terms of challenging organisational culture which prohibits help-seeking due to stigma, Schwartz Rounds offer staff the opportunity to disclose their vulnerability whilst fostering a connectedness to other staff. However, Schwartz Rounds have not been evaluated and it is unclear whether they reduce stigma, facilitate help-seeking behaviour, or alter mental health outcomes. Quantitative evidence describing the effectiveness of Schwartz on the above outcomes would be useful.

A note about Covid

This is the first review to qualitatively synthesis the barriers and facilitators to help-seeking in the emergency services, and frontline staff's experience of mental health protection and recovery following traumatic incident exposure. The search was conducted in March 2020, before the emergence of qualitative literature relating to the Covid pandemic, offering a summary of evidence preceding this significant historical benchmark. Qualitative literature relating to ESW mental health in the context of Covid-19 necessitate analysis in their own right, due to the distinct psychological stressors brought on by a pandemic, such as fear of infecting family members. ¹⁰⁰ Healthcare workers experience different mental health pressures

in this unique context, 101 and should therefore be studied in a separate context to police and fire workers.

Implications for further research to help inform policy

recovery time when they can access informal support from their colleagues. ESOs should be aware of the therapeutic effects of informal support in this postincident setting, and facilitate its availability. It should be considered that despite recognising its value, ESWs are unlikely to request downtime themselves, instead relying on it being imposed/offered by supervisors. It may also be useful for supervisors to consider that the manner in which they approach ESWs for welfare concerns, as demonstrated by this review, in addition to their overall attitude regarding mental health, have significant implications for the help-seeking behaviours of ESWs. It may be important to consider that ESWs report trusting professional relationships, such as regular work-partners, as being psychologically protective against occupational trauma experiences, providing vulnerability can be comfortably

Following traumatic calls, ESWs will likely benefit from having a period of mental

shared. ESWs may benefit from education enhancing their ability to recognise pathological emotional changes secondary to traumatic incident exposure both in themselves and colleagues, and to able to appreciate when it is appropriate to access formal organisational resources and the potential benefit of different types of interventions for trauma exposed ESWs. Additionally, communicating to ESWs that the objective characteristics of an event cannot invalidate their experience of being traumatised, could enhance help-seeking by normalising symptoms of mental ill health. ESOs may wish to consider that mental health champion-type roles, providing staff in such roles are adequately supported, are regarded by ESWs as valuable tools for challenging mental health stigma. This review's findings may provide insights into how engagement between ESWs and official peer support networks can be improved, by focussing on cultural anti-stigma change and by targeting specific barriers to engagement as identified in the results section. Quick fix solutions to the cultural change necessary to increase help-seeking in ESOs should not be prioritised over meaningful sustained efforts to improve mental health literacy.

Conclusion

This review explores the role of mental health stigma on help-seeking behaviours of traumaexposed ESWs, who often access informal defusing opportunities in preference to formal
interventions. The barriers and facilitators to help-seeking identified by this review may assist
emergency medical organisations in improving engagement amongst their staff with
organisational wellbeing interventions, in keeping with the organisation's responsibility to
dismantle barriers to help-seeking and destigmatising mental ill health and vulnerability
through role modelling and supportive leadership. Findings related to the experiences and
attitudes of staff regarding mental health protection and recovery should be considered when
implementing occupational support programmes.



Footnotes

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Figure legend: Supplementary Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.

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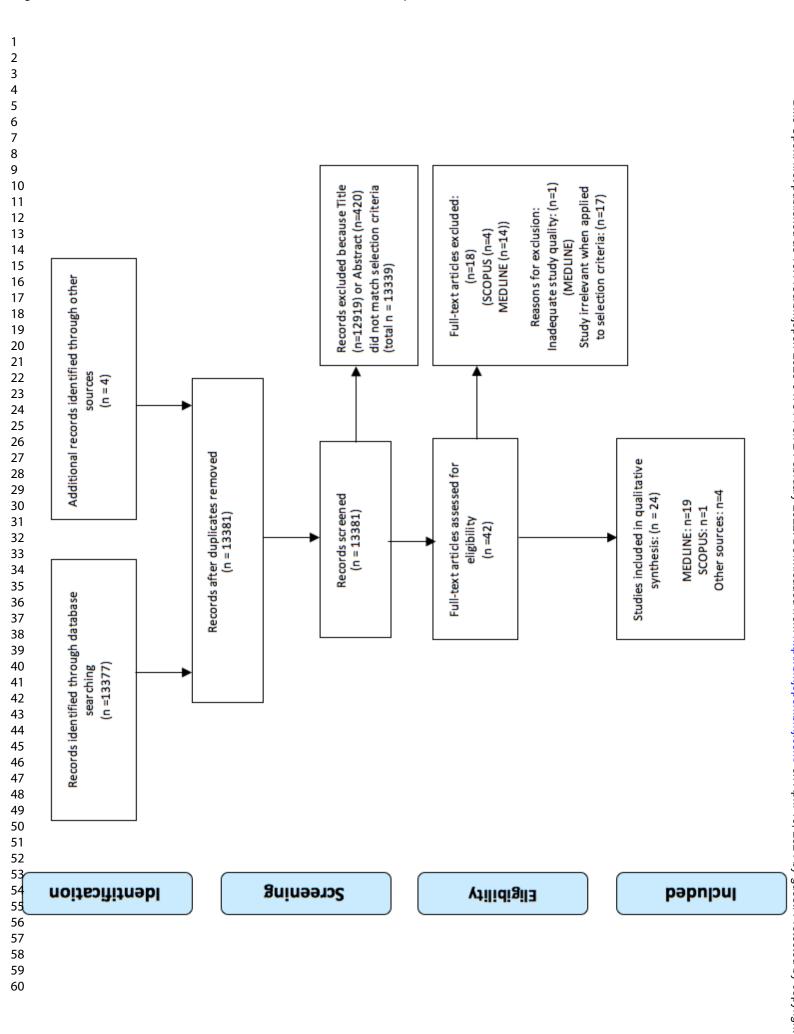
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BMJ Open BMJ Open Online supplementary file 1: ENTREQ checklist (Enhancing transparency in reporting the synthesis of qualitative research

	T _	T =
No	Item	Guide and description
1	Aims	To synthesise the evidence on:
		1. The factors that contribute to mental health protection and recovery
		as expressed by emergency service staff following occupational
		critical incident exposure
		2. The barriers to and facilitators of mental health help-seeking
		behaviour among psychologically distressed emergency service staff
2	Synthesis	Thematic synthesis
	Methodology	
3	Approach to	Pre-planned comprehensive search strategies, combining database
	searching	searching with manual search methods.
4	Inclusion criteria	Articles were eligible for inclusion provided they met the following
		criteria:
		(1) Study participants were frontline ESWs* (studies with mixed
		populations of eligible participants were included); (2) There is a
		focus on work-related psychological distress*; (3) Data collection
		includes primary qualitative interviews, focus groups or observational
		methods (this included mixed methods studies with qualitative
		components); (4) Analysis focussed around participant attitudes
		towards: a) behaviour aimed at improving or protecting mental health
		after experiencing a traumatic event OR b) factors which ESWs find
		helpful or unhelpful for their mental health while experiencing work-
		related psychological distress, are explored; (5) Published in English
		and peer-reviewed.
		Exclusion criteria: (1) Due to the unique nature of the traumatic
		events witnesses in this cohort, studies investigating a military cohort
		will be excluded; (2) Volunteer ESWs were not included.
5	Data sources	OVID MEDLINE, EMBASE, PsycINFO, SCOPUS. To identify
		articles missed in the electronic database search, the following
		methods were also employed:
		-Using 'related article' feature (when available).

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		-Searching the titles of included studies in google scholar for citation
		tracking purposesManual searching of the references of relevant studies (reference chaining).
		Grey literature was searched during background research for context but not to locate eligible studies.
6	Electronic search strategy	The two combinations of search criteria (see Appendix A) were entered into each database. Figure 1 provides an overview of the database search.
7	Study screening methods	The eligibility criteria were applied against the titles of the database search results by one reviewer (NA). The full text of studies with potential relevance was screened. (Figure 1)
8	Study characteristics	Study characteristics are presented in Table 1.
9	Study selection results	PRISMA guidance was used to construct a flow diagram displaying the database searching process (Figure 1). Of the 13381 records identified once duplicates were removed, the full text of 42 articles were screened, and 24 studies were included in this qualitative synthesis.
10	Rationale for appraisal	All potentially relevant studies were quality appraised by one reviewer (NA), using the Critical Appraisal Skills Program (CASP) guidelines. Studies meeting less than 5 criteria were then subject to further scrutiny, in the form of five quality appraisal prompts developed by Dixon-Woods et al. (see 'quality appraisal' section). This second stage of appraisal was carried out independently by BR, MB or JW, and decisions relating to the inclusion of these studies in the review were made following thorough communication between reviewers and referring to pre-determined quality prompts.
11	Appraisal terms	Critical Appraisal Skills Program (CASP) guidelines and quality appraisal prompts (see 'quality appraisal' section) were used to quality appraise all included studies.
12	Appraisal process	Quality assessment was carried out primarily by one reviewer (NA), with independent verification from RR, MB or JW for ambiguous studies.

13	Appraisal results	CASP scores of included studies are provided in Table 1. Full study
14	Data extraction	quality assessments are available for review if required. A data extraction template (Appendix B) was created for this review by one reviewer (NA). Sections for first, second and third order
		constructs are included in the extraction template, which was filled manually by one reviewer (NA).
15	Software	RefWorks reference management software.
16	Number of reviewers	Two reviewers were involved in the coding and analysis (NA, RR).
17	Coding	One reviewer carried out line-by-line coding (NA). RR aided with the grouping of codes, and assisted with the generation of descriptive themes.
18	Study comparison	During primary readings of the studies, overarching concepts relating to the research aims were noted. The generation of new codes altered pre-existing codes.
19	Derivation of themes	Initial coding was carried out in correspondence between two reviewers (NA and RR), and was grounded in the extracted data. Thematic synthesis of initial codes was an inductive approach, and involved roundtable discussion between all four authors.
20	Quotations	Appendix C provides example literature quotations from included studies which were used to construct themes.
21	Synthesis output	This qualitative review generated 14 descriptive themes. These are grouped into either 'factors contributing to mental health recovery post traumatic incident exposure' or 'factors influencing mental health help-seeking behaviour'. Table 2 presents a summary of themes. These descriptive themes were applied to the context of UK emergency service organisations to produce implications for practice and research.

Tong A. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. BMC Medical Research Methodology;12(1):181-182.

Manuscript online supplementary files

Online Supplementary File 2: CASP appraisal table

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Online Supple	mentary File 1	: ENTREQ cho	ecklist (submit	ted separately)			bmjopen-2020-047814 on 2 February 2022. Downloaded from		
Online Supple Study title (Authors,	ementary File Aims & Methods	Research design		Data collection	Reflexivity	Ethical issues	Data amalysis	Discussion of findings	Value
What makes an incident critical for ambulance workers? Emotional outcomes and implications for intervention. Halpern et al. 2009 ⁴²	Research aim clearly stated, introduction uses relevant literature to successfully explain demand for the research. Qualitative methods are appropriate for investigating complicated emotions, which could not be explored in equal depth via quantitative methods.	Interviews and focus groups seem appropriate methods to address the research aims, but the authors don't specify the reasons for their choice to use both methods.	4 supervisors, 54 front-line ambulance workers. Researchers state that participants were recruited from a specific cohort at a mandatory training conference, but no detail is given about what information was provided to the participants to entice them to enter the study. The authors considered representation of all job levels and both genders	The setting of the data collection away from the workplace was stated but no justification was given for the choice of study setting or methods used. Detail was given about the length of interviews and focus groups, and the main topics of questions asked during interviews and focus groups were stated. The researchers stated they had reached saturation by the end of the study. Data obtained was in the form of	Researchers do not acknowledge how their characteristics may have impacted on the results. The researchers acknowledge that self-selection or reporting bias may have contributed to the discrepancy in findings between men and women.	Ethical approval was obtained from a research ethics board, and participants signed a consent form. No further information was given regarding any ethical safeguards in place. Lack of description of how confidentiality was maintained.	The authors described how ethnographic content analysis was used to generate thematic codes, with a constant A comparative method throughout throughout the coding process, although only two of these authors listened to the audiotapes. Initial and inal codes are described and contradictory data are taken into account. Sufficient data are data a	Findings are explicitly stated and are relevant to the researchers' aims. The only measure of credibility described was the use of three analysts during the coding process. Findings are discussed with reference to wider literature, and implications for interventions for critical incident stress are made.	The authors identify promising post-incident interventions which they believe should be further researched. Wider applicability of the study findings appear to not extend beyond the ambulance cohort. The authors provide implications for interventions for critical incident stress.

		during recruitment.	audio recordings, written transcripts and written notes			presented to support the		
Police officers' experiences of supportive and unsupportive social aim 'was to understand the types of support traumatic incidents. Evans et al. 2013 ⁵⁶ Research aims made clear in objectives section. Overall aim 'was to understand the types of support processes that might promote resilience'. Methods are appropriate as experiences, and other subjective outcomes are best measured qualitatively.	Semi-structured interview design appears reasonable to explore the proposed aims, but choice of qualitative study design not directly justified.	19 Police officers. A snowballing approach was used to recruit officers, which allowed detection of information-rich participants. By limiting participants to those who have served over 2 years, the chance of traumatic incident exposure was increased. Limiting participants to those without diagnosed PTSD was appropriate as the study measured resilience-promoting investigations. Non-participation was not	of non-verbal communication information as observed by the researchers. An interview schedule was used for the semi-structured interviews, although only the broad focus of the schedule was provided by the authors. Interviews were audio-recorded and transcribed verbatim. No information was	Researchers acknowledge how their role as researchers could have affected the data, giving social desirability bias as an example.	A National Health Service ethics committee granted ethical approval, and participants provided informed consent. No information is provided regarding efforts to maintain confidentiality.	findings. The authors describe how textual data was not abalysed for focus allysed for focus allyses of thematic Balysis was described in detail. All hemes generated an be linked with relevant all the contradictory data is table or contradictory data is table or contradictory data is table in the manalytic process to minimal bias. One author had the main ble in the analytic process to minimal bias. One author had the main ble in the analysis, while two others cross-referenced certain posts of their workin order to increase credibility. All 3 researched? reached all consensus on	Themes are clearly summarised, with relevant quotations to support each theme. Findings are discussed in relation to the research aims. Three researchers were involved in the analytic process.	The researchers provide detailed recommendation for further quantitative research. Furthermore, the researchers recommend similar qualitation research in a population that has a history of PTSD, so that comparisons cabe made.
Interventions for critical incident stress in emergency medical services: a qualitative study increment of interventions that	Explanations were provided for how the focus groups and semi- structured interviews were conducted. E.g	4 supervisors, 54 front-line ambulance workers. Participants were sampled to ensure all job levels and	The setting of the data collection away from the workplace was stated but not explained. Detail was given about	Researchers do not critically examine their role, potential bias and influence of research	Ethical approval was obtained from a research ethics board, and participants signed a consent form. No further	unclear issues before the final themes were decided isson. The authors described how ethnographic content analysis was used to generate thematic codes, using a	The findings are clearly presented, using relevant participant quotations to support the authors	The research conclusions appear relevant all EMS organisations which operate i the format of

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2008 ⁴³ EM Ex ex ad rec qu mo	ke into account MS culture.' xamining xperiences dequately rquires alitative tethodology.	flexible interview structure ' to permit the elaboration of more in-depth or emotionally significant data' and focus group size of 4-8 members 'to maximize interactive data'. No justification given for choice of interviews and focus groups.	genders were represented. Researchers state that participants were recruited from a specific cohort at a mandatory training conference, but no detail is given about what information was provided to the participants to entice them to enter the study. The sampling process was iterative-preliminary analysis informed subsequent sampling decisions. No further participants were recruited once saturation was reached.	the length of interviews and focus groups, and the main topics of questions asked during interviews and focus groups were stated. The researchers stated they had reached saturation by the end of the study. Data obtained was in the form of audio recordings, written transcripts and written notes of non-verbal communication information as observed by the researchers.	question formulation or data collection.	information was given regarding any ethical safeguards in place.	constant 80 comparative method to categoriss themes. Initial and final Bodes are described. The authors explain way textual der was not analy sed for focus groups. Member ov validation was carried og 6 months post initial data collection Contradiency data are presented and discussed, and sufficient data are presented to supporting	interpretations. 3 analysts were used during the data analysis process. Member validation was carried out 6 months after data was gathered. Contradictory viewpoints are taken into account and discussed.	using supervisors. The authors provide suggestions for interventions which are of relevance to EMS organisations. The authors recommend that the interventions of: 1. Supervisor support 2. Timeout period post-incident should be further researched.
Facilitators to Seeking Mental Health Care Among First Responders: "Removing the Darkness" Jones et al, 2020 ⁶² per interpretations	ims are clearly ated and the udy's importance stiffed. The atthors aims include exploring rganisational alture and erceptions of idividuals, for hich qualitative search is oppropriate.	The decision to use individual ethnographic interviews the qualitative method of choice is well explained. The authors also explain why they chose a 'community-based approach'.	32 firefighters and/or EMTs/paramedics	Ethnographic ndividual interviews were conducted with participants by the principal investigator. An interview guide was used and attached, which was developed by the PI based on the study aim and input from a qualitative methods expert,	The principal investigator acknowledged how being married to a firefighter/parame dic promoted buy in from the community during the recruitment stage.	Ethical board approval was gained. 'Prior to starting the interview, the PI reviewed the study information sheet and completed the consent process with each participant.' Resources for further emotional support were provided to participants in case of emotional	Content analysis and constant comparises methods were used during the analytic pocess. Themes which emerged during data analysis were checked with participass in later interviews. Two researchers independently analysed the transcripts and discussed the process until	Findings are presented as themes, with participant quotations included for each theme to support the author's interpretations. Credibility was enhanced by the use of more than one analyst, and member validation. Findings are discussed in relation to the	The authors make implications for practice, identifying 'need for improving education and awareness regarding duty-related MH problems.' The authors also make implications for nursing practice, and implications for future research.

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	~	their own organisations. They did this by distributing e-mails on behalf of the principal investigator. Reasons for non-participation: 'individuals not answering or returning calls (all were called twice), scheduling conflicts'	along with feedback from community partners to strengthen trustworthiness and validity. Interviews were audio recorded and transcribed. Field notes were also conducted by the authors. Data collection setting was decided on the basis of convenience for participants. Data saturation was reached.	Prier	distress experienced during the study.	consensus vas reached. In 80% of top level codes). N Exploration of new then saturation vas reached. N participate quotation are provided D throughout to support the author's on interpretations. The researchers acknowledge a bias risk blie to the principal investigator conducting all the interviews Sufficient all the interviews Suffic	original research question.	
Exposure to human tragedy, empathy, and trauma in ambulance paramedics. Regehr et al, 2002 ⁴⁰ Aims of study are clearly stated, and their importance justified. Qualitative methods are appropriate because the authors want to explore experiences in depth.	Choice of qualitative study design not explicitly justified.	18 paramedics. 'Purposive sampling was used to ensure that participants represented a wide range of experiences in terms of length of time with the service and types of events encountered.' Non participation	A semistructured interview guide was used to conduct interview, and the authors provided examples of guide topics. These interviews were audio-recorded and transcribed, and field notes were taken. The authors acknowledge they	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection. No mention of changing the research design as the study progressed.	No mention of ethical approval, or consent gained from participants. No attempt is made to explain how confidentiality was maintained.	Nvivo was used to aid in that analysis. Spen coding was used initially to generate broad categories. Towards the later stages of the process, selective coding was used to develog a meaning anarrative of the experiences of the	Findings are presented in sections headed by themes. Author's comments are supported by first order interpretations. Triangulation with members of emergency service organization was carried out	The authors acknowledge that the study is 'not intended to reflect the views of all paramedics in all organizations; rather, it describes a particular phenomenon experienced and described by one group of paramedics and
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			1-On	workers. 80 Interviewers also recorded Geld notes. 20 Triangulation with mensure of emergence service organization was carried of throughow the research, and analysis of data was discussed. Two mensures of the research team developed the coding tree together. A third member reviewed the open and selective soding. It is not char how the themes were derived from the data, but sufficient lata are presented to support the findings. Contradictory data are included in the findings and discussed.	throughout the research, and analysis of data was discussed. Two members of the research team developed the coding tree together. A third member reviewed the open and selective coding.	points to some interesting avenues for further consideration. These include future attempts to measure cognitive and emotional empathy in paramedics and assess the impact of these strategies on posttraumatic and depressive symptoms and on social supports.'
The meaning of traumatic events as described by nurse sin ambulance service yourse of the aims, which is to explore subjective experiences in detail. A phenomenologica l approach was used, and the reason for its us thoroughly explained. The use of self-reports over the use of interviews was not justified (the authors said that interviews and self-reports are	240 medical technicians and 122 registered ambulance nurses. The authors asked 500 participants of another study to write down their experiences with traumatic events. No detail is given how the sample of the written The question the participants were asked to answer was: 'Write down situation which you experienced as a traumatic event''. From the data returned by the participants, the authors selected 25% of the written	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection. No mention of changing the research design as the study progressed.	Ethical approval was granted. Consent was implied through willingness to participate in the study, but no information is given regarding a signed consent form. In addition, participants were assured that they could withdraw	Van Kaades scientifico explication was used to applyse the written stories. Detail was provided about the steps of this thematic analytic process. Only 25% 20f the written steries were further analysed, and	The findings are in the form of themes, supported by first order data and the author's interpretations. The findings are related to the original research question in the discussion. There is no mention of any efforts to increase the	The authors recommend specific areas for further research, limited to the ambulance sector. The organisational interventions recommended by the authors are likewise limited to the ambulance sector.
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clearly stated, and their importance of post-traumatic stress among ambulance personnel Jonsson et al. 2004*5 2004*5 a limited at li. description of each, were ambulance experiences in detail.				ВМЈ (Open		bmjopen		
definition of the study was recruited. Note the participation is phenomenological 1 studies.							1-2020-04		
clearly stated, and their importance of post-traumatic stress among ambulance personnel Jonsson et al. 2004 ⁴⁵ and propriate due to appropriate due to inature of the aims, which is to experiences in detail.	me em ph l s	nethods in mpiric- henomenologica studies.	ruited. Non rticipation is t discussed.	further analyse. These written accounts were strategically selected based on having the fullest description of a traumatic event. Details of the analytic process are provided. Saturation of data		any time. The questionnaire was not labelled with the name of the participant. Confidentiality was guaranteed by eliminating names or other identifying characteristics from the essays.	were strategically selected for being more daterich. There is no information to reveal hose many researched are involved the analytic process. Sufficient lata is presented to support the findings. Where is no mention of contradic ry data being taken into account. The researched does not critically appraise their own potential bias.	findings.	
	need for a container: a study of post-traumatic stress among ambulance personnel Jonsson et al. 2004 ⁴⁵ clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in	henomenology vas 'chosen for s potential to rasp the meaning of such henomena hrough the escription of ved xperiences.' henomenous info how were relevant to that were selevant to the sex expedies a 'v. sex, educe back experiences.'	rses or bulance hnicians. sufficient formation on w participants re The only evant formation is at participants re strategically ected to obtain variation of to, age, acational ekground, and perience as bulance staff.'	interviews was described but not justified. Interviews were open in structure, beginning with the question "tell about a traumatic event that you have experienced". 'do you mean?" or "How did you feel about that?". The interviews, taking about an hour and a half each, were audiotaped and transcribed word by word.' Reason for choice of interview as method of data	not critically examine their role, potential bias and influence of research question formulation or	described, the extent of participation was explained, and potential risks were explored with the participants, who were assured that they had the right to withdraw from the study at any time. The study was approved by the Ethical committee at Göteborg University. To protect participant confidentiality, no quotations were	provide details about them steps of the analytic process, with the latter steps being repeated shee the author was familiar with existing philosophy. Due to the authors not using parficipant quotation (to protect participant confidentiality), it is not possible to determine whether we author's findings are supported by first order interpretations. Contradio or with the steps of the protect participant confidentiality), it is not possible to determine whether we author's findings are supported by first order interpretations.	displayed under relevant sub- headings. In the discussion section, there is some debate for and against the researcher's arguments. No attempts made to demonstrate efforts to enhance	emergency medical organisations, however caution should be taken due to the small sample size and lack of information about participant demographics. The authors recommend for the insights gained by this study to be ' distributed to all ambulance managers and other relevant personnel categories. 'The authors

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Situation Critical: High Demand, Low Control, and Low Support in Paramedic Organizations Regehr et al. 2007 ⁴¹	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	Long interview design was chosen 'to explore in detail the experiences of paramedics in their organizations including their roles, the demands placed on them, the control over the working environment that they experience, and the supports that they receive.'	17 paramedics. Paramedics were purposively sampled from the sample of participants partaking in the quantitative component of the study. Purposive sampling was used to ensure that participants represented a wide range of experiences in terms of length of time with the services and types of work experiences encountered.	explained. Saturation of data not discussed. A long interview method was used to collect data. The interviews followed an interview guide (not provided), were audio recorded and transcribed verbatim. The interviewer made their own notes during the interview. Setting of data collection not provided, saturation of data not discussed.	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	No mention of ethical approval, or consent gained from participants. No attempt is made to explain how confidentiality was maintained.	without the direct participant quotations and the interview data was elective to ding framework. After the initial coding framework was developed the transcriber interview was developed to N*VIVO a computer generate data analysis system, and the interview data were coded by multiple coders and subjected of detailed the matic analysis. The final stage of analysis, constant comparates method of data analysis system and the interview data were coded by multiple coders and subjected of detailed the matic analysis. The final stage of analysis, constant comparates method of data analysis was implemented to compare great analysis. Furthermore, paramedial organisations were consulted when creating the	Findings are presented in themed subheadings. Authors claim to have enhanced credibility through 'prolonged engagement and persistent observation'. No mention of more than one analyst, and qualitative findings were triangulated with quantitative results.	recommendation for management. The authors mak recommendation for EMS organisations, based on a mixture of their quantitative and qualitative results

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the need of police officials for trauma intervention programmes - a qualitative approach. Boshoff et al. 2015 ⁵⁷ explore subjective experiences in detail. were classified, and their importance justified. Qualitative appropriate due to nature of the aims, which is to explore subjective experiences in detail. Clearly stated, and their importance justified. appropriate due to nature of the aims, which is to explore subjective experiences in detail. The restate: T groups the rese interact system and	collection in to 'allow the cher to gain to into tinto	ng for data ction was not ned. Three s groups were ed out, and -structured views were ormed within focus groups. It questions d are ided by the archers. The ons were or recorded, cribed and ysed. ration of the is not issed.	talked about. Contradictory data are token into account. Ethical approval was gained for this study from the North-West University's ethical committee . Informed consent was taken by the researchers. 'Participants were furthermore encouraged to withdraw from the focus groups at any time should they feel uncomfortable or experience any harm or emotional consequence as a result of participating in the study.' The authors describe \$\mathbb{\text{8}}\$ step method of the authors describe \$\mathbb{\text{9}}\$ step method of the authors described at a researchers. The authors described at a researchers are presented of the authors described at a researchers. The authors described at a researchers are presented of the authors described at a researchers. T	Findings are presented as subthemes, supported by sufficient quotations. There is limited discussion for and against the researchers' arguments. No efforts are made to enhance credibility of findings. The authors giv a variety of 'preliminary indicators' for which a 'purposeful psycho-social trauma intervention programme' is indicated. The generalisability this is limited to police forces.
post-traumatic their importance chosen justified. reasons among Qualitative use over	iews were Station Officers, inter 4 Sub Officers, 4 cond privator focus Firefighters, 2	e-to-one Researchers do views were ucted in a te room with cipants. They d or up to 90 Research Researchers do not critically examine their role, potential bias and influence of research	No mention of informed consent, ethical approval or methods to ensure confidentiality. The interglews were recorded and fully? transcribed and the data were analysed by	Findings are presented as subheadings of themes, with participant quotations The authors provide recommendation for fire organisations. These

Haslam et al.	appropriate due to	explained. The	Officers and 2	minutes. The	question		sorting verbatim	supporting the	recommendations
200360	nature of the	interview	Area Divisional	interview	formulation or		material into	authors'	are concerned
	aims, which is to	schedule was	Officers. No	questions were	data collection.		emergent@hemes	comments.	with efforts to
	explore subjective	developed in	information	stated by the	The researchers		as described by	Credibility is	improve staff
	experiences in	conjunction with	provided on how	researchers.	acknowledge that		Dey (199 3) . A	enhanced by the	wellbeing.
	detail.	psychologists	participants were	Open-ended	their small sample		second regearcher	use of two	
		working within	recruited. 'The	questions would	size may not be		independently	analysts.	
		the fire service, as	sample was	be used to explore	representative.		checked	anarysts.	
		well using	selected to cover	participants'	representatives		analysis to ensure		
		relevant literature.	the range of	feelings towards			analysis Quisare		
		Total value into action of	positions in the	incidents. ;The			analysis 00 reliability0		
			service and the	interviews were			There is little		
			proportion of	recorded and fully			transpare ty to		
			respondents in	transcribed and			show how the		
			each position	the data were			themes were		
			broadly reflects	analysed by			develope from		
			the profile of the	sorting verbatim			the primary data.		
			service.'	material into			Use of a second		
				emergent themes			researche		
				as described by			enhances =		
				Dey (1993)."			credibility Direct		
				Choice of data			participan		
				collection			quotationsare		
				methods or study			sufficiently used		
				setting was not	Y /		to support the		
				justified.			authors'		
				Saturation of data			interpretations.		
				was not			Contradictory		
				discussed.		1	data are taken		
							into account.		
A qualitative	Aims of study are	Both interviews	7 EMTs and 6	Questions asked	Researchers do	'The study was	A detaile€	Themes are not	The authors
study about	clearly stated, and	and focus groups	nurses. Snowball	during the	not critically	approved by the	description of the	provided with any	recommend
experiences and	their importance	were used as	sampling was	interviews were '	examine their	Ethics Committee	analytica process	participant	greater training
emotions of	justified.	methods of data	used to recruit the	developed based	role, potential	of the University	is provided. 'To	quotations. 'To	for health
emergency	Qualitative	collection, the	participants.	on the reviewed	bias and influence	of the Basque	ensure the quality	ensure the quality	professionals
medical	methodology is	reason for their	As a prerequisite	literature and	of research	Country.'	of the Sinterpretation and	of the	when 'notifying
technicians and	appropriate due to	use was not	for their inclusion	experts'	question	'echnique was	interpretation and	interpretation and	bad news and
out-of-hospital	nature of the	explained.	in this study, the	opinions', but the	formulation or	based on their	guaranteethe	guarantee the	providing
emergency nurses	aims, which is to		health workers	authors do not	data collection.	availability and	reliability of the	reliability of the	psychological
after performing	explore subjective		were required to	provide a topic		preferences.	informati <mark>e</mark> n	information	support to the
cardiopulmonary	experiences in		have carried out	guide or examples		Participants gave	obtained, 🔏	obtained, a	family members
resuscitation	detail.		at least 5 CPR	of other prompts.		their written	triangulation	triangulation	of the deceased
resulting in death			techniques	'The assignment		consent to	between all researches	between all	' No
Fernández-Aedo			resulting in death	of participants to'		participate in the	researche	researchers	recommendations
et al. 2017 ⁴⁷			over their entire	either individual		study and to be	involved the	involved in the	for research are
			professional	semi-structured		recorded in audio	interview was	interviews was	made.
			career. No	interviews or		and/or video	also carried out.	also carried out.	
			volunteer staff	focus groups 'was		format.'	Any disagreement	Any disagreement	
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							'nį		
							Any disagreement		
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	the study. 'In order to ensure heterogeneity, the study included healthcare professionals of different ages, both genders and varying years of experience, working at different institutions.' Non participation was not discussed.	based on their availability and preferences.' 'A total of 3 health emergency technicians and 3 nurses were interviewed individually for a total of 1135 min by two of the researchers involved in the study. The focus group was comprised by 4 EMTs and 3 nurses, and it was used to triangulate the information obtained during the individual interviews. The group session lasted 76 min and was carried out by two researchers, one acting as a moderator and the other as an observer.' Data saturation was reached.	Prier	v 0/2	was resolæt. No participare quotations are provided to support the support th	was resolved by consensus.' Other than the use of multiple researchers in the analytic process, no other methods to increase credibility are discussed.	
Experiences of and actions clearly stated, and their importance justified. ambulance nurses in their professional life: A critical incident study Svensson et al. 2008 ⁴⁸ A diss of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to aims, which is to explore subjective experiences in detail. There is no justification for the choice of semi-structure interviews as a method of data collection.	nurses. Participants were strategically selected from three ambulance services based on 'sociodemographic and professional characteristics	The authors explain the structure of the interviews, giving examples of the open-ended questions which they ask to participants at the start of the interview. The authors say the	'As both the researchers and the nurses were familiar with the environment in which the study was conducted, the risk of misunderstanding during the interviews was minimised.'	'The managers of the ambulance service involved gave approval for the study to be conducted in their department.' The authors say ethical board approval is not required in Sweden under	The intervence were also cad through several times before categorized them into sub-Transcore to the categories of the incident of the incidents were analysed according to	Findings are arranged into themes and subthemes, and participant quotations are included for each theme to support the authors' conclusions. Credibility was enhanced via the	The authors recommend further research: 'This phenomenon should be studied more in-depth in order to map how the interaction with colleagues influences the worry among
					according to opyright.		

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Explaning the Aims of study as	The outloon used	education level, sex and years in the profession'. Non participation is not discussed.	was not discussed.	Pasarahara da	0/7	character and content. This step was repeated several times before the end result embraced. The categories was condected in cooperation with the second experienced both in theory and practice, which minimised the risk of subjectivity (Andersson and Nilsson, 1964). Direct quotes from the minimised the accuracy of the study. Contradictory data were aken into account, and sufficient from the subjectivity of the study. Saturation of data was not a discussion.	use of two researchers when categorising incidents. Authors consider contradictory data in the discussion.	ambulance nurses.' Some recommendations are also made for employers of nurses.
Exploring the nature of resilience in paramedic practice: A psycho-social study Clompus et al. 2016 ⁴⁹ Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective	The authors used free association narrative interviewing, a technique which involves a preliminary narrative interview, followed by a semi-structured	'An advert, with a brief study outline, was placed in a regional Paramedic bulletin which was circulated electronically to staff with an invitation to	The researchers justify their use of using Free association narrative interviewing. Saturation was achieved after the 6th interview. Details of the exact two stages	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	'Ethical approval was received from a (NHS) research ethics committee and a university in the SW of England. Confidentiality and anonymity was secured through the use of	Details of the FANI analytic process were given by the researchers. 'Any discrepandes were examined and discussed until constants was reacted. Trustworthiness	Themes are presented as sub-headings, and supported by the direct participant quotations. Member validation was carried out to improve credibility.	The authors relate the findings of the research to the theories of exiting organisational interventions, eg TRiM. The authors conclude that for front-line paramedics, ' applying
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experiences in detail.	interview. 'This enabled a deeper analysis of the affective and often unconscious aspects of paramedics' lives. ' Three out of 10 individue became unavailable the authors explain why	process were provided by the authors. interviews were audio recorded and transcribed, and carried out at a place of the participants' choosing. f the als	Viel viel	pseudonyms for participants, and all data were kept in a password protected personal computer with access limited to SC. Participants were made aware that they could withdraw at any time and that the anonymised data would be disseminated in various ways. Due to the potential distress that participation could inadvertently provoke, information on how to access counselling services was made available to all participants.'	and data occredibility were established by several means including participates feeding into the study's air so the study's are for verification. The authors are not clear how many researchers are involved in the analytic process. For each theme, sufficiently participated to support the authors' contradictory data were at and compart and into according to the support the authors' contradictory data were aken into according to the study of the support the authors' contradictory data were aken into according to the study of the support the authors' contradictory data were aken into according to the support and the support th		interventions and reviewing support mechanisms would seem to be a pressing imperative.'
First response emergency care – experiences described by firefighters Abelsson et al. 2019 ⁶¹ Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors justify their choice of group interviews, and why limits are set on group interviews: 'The group sizes of eight and nine participants were considered acceptable to moderate and managed by the researcher. Authors dor explain hov participants recruited in study. Study.	Setting for group interviews was	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	No approval has been sought from an ethics committee, which is in accordance with Swedish law. Consent was implied through participation in the study, following the delivery of verbal 'clear information' by the researchers.	discussed: The authors describe ffeir method object- driven, 22 interpretize qualitative content analysis. This involved repeated readings of the transcribed interviewer and then identification of 'meaning units', then codes were derived, and	Findings are presented as four themes, with consistent use of primary quotations to support the researchers' arguments. The findings are discussed in relation to the original research question.	The researchers contrast their findings with other research in the field, such as in the case of spouses being used as sources o support by firefighters. They also recommend areas of future research, eg involving other strands of

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		Interaction in the		giving questions		Methods taken to	formed into sub-		emergency
		pre-existing		which were asked		protect	categories and		service workers.
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		is key to a		There is no		described.	Sufficient data are		
		successful group interview. In this		mention of saturation of the			present to qupport the findings.		
		study, all		data. The authors			Contradictory		
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		research purpose'					no explic		
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				NA			acknowledge that 'participats in		
							group interviews		
							may experience a		
							pressure within		
					71.		the group		
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Paramedics'	Aims of study are	The authors used	28 paramedics.	The authors	The researchers	Ethical board	The authors	The findings are	The findings are
experiences with	clearly stated, and	focus groups as	Participants were	provide the	acknowledged	approval was	describe an	presented as	discussed in
death	their importance	their method of	self-selected.	locations of the	that their choice	gained, and	inductive S	themes, supported	relation to
notification: a	justified.	data collection,	Recruitment	focus groups, and	of focus group	written consent	approach ★ data	by participant	existing literature,
qualitative study	Qualitative	but did not justify	messages were	give examples of	location, as well	obtained. No	analysis. ₹wo	quotations and	and the authors
Douglas et al. 2013 ⁵⁰	methodology is	their use over other qualitative	delivered via	questions asked during the	as the presence of	information is	researchers were involved In the	authors'	make
2013**	appropriate due to nature of the	methods.	'departmental e- mail, flyers,	sessions. There is	the supervisor in the focus group	provided on efforts to	analysis process.	interpretations. Credibility was	recommendations for practice,
	aims, which is to	methods.	and by word-of-	no explicit	may have affected	maintain	Themes were	enhanced by	specifically
	explore subjective		mouth'. Authors	justification for	the answers given	participant	discussed with a	distributing	regarding
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			selected were the	other qualitative	do not critically		consensu was	participants for	
			most appropriate	methods.	examine their		reached.	the purpose of	
			for the study, and	Methods were	own role.		Credibility was	generating	
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Peer-support: a coping strategy for nurses working at the Emergency Ambulance Service Adms of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to The authors used semi-structured interviews. The authors explain their choice of questions result from pre-existing	required by to author and the facilitator affects each session clarify some questions bate on the paramedics' responses. 'I groups were audiotaped a transcribed. Saturation we discussed: the authors kept recruiting participants asturation we reached. 'Participants were recruited on a voluntary basis from an voluntary basis from an emergency medical service in the north of Italy.'	Researchers do not critically examine their role, potential bias and influence of research	Ethical approval was gained from the Bioethical Committee of the University of Bologna. Informed consent	participants at the end of foots groups. Contradictory data are then into account, and sufficient lata are presented support the findings. 222. Downloaded from http: 'The intercess were conducted and analyzed by all the resparchers after having been faithfully transcribed on	Findings are presented as themes. Authors discuss arguments for and against certain issues raised. One	The authors relate their findings to their aims. They propose that a peer support program should be introduced in
Carvello et al. 2019 ⁵¹ appropriate du to nature of the aims, which is to explore subjective experiences in detail. Ition pro-Carbuid on to justify the use of interviews ove other qualitative methods eg focus groups	The sampling was by the resear for choosing	thers this to data collection. formulation or data collection.	was gained from participants before participation. Efforts to protect confidentiality are not discussed.	digital test documents reporting no brackets some relevant monverbal gestures, and after flaving evaluated the nodes and relationships generated by the nVivo qualitative research software 12. Although sufficient lata are presented to support the findings, it is unclear has with	example of this is the inclusion of quotations of participants who prefer talking to a peer supporter, and those who prefer talking to a professional therapist. No mention is made of efforts to discuss the credibility of findings. Contradictory data are taken into account and discussed.	the ambulance service. No recommendations for further research are made.

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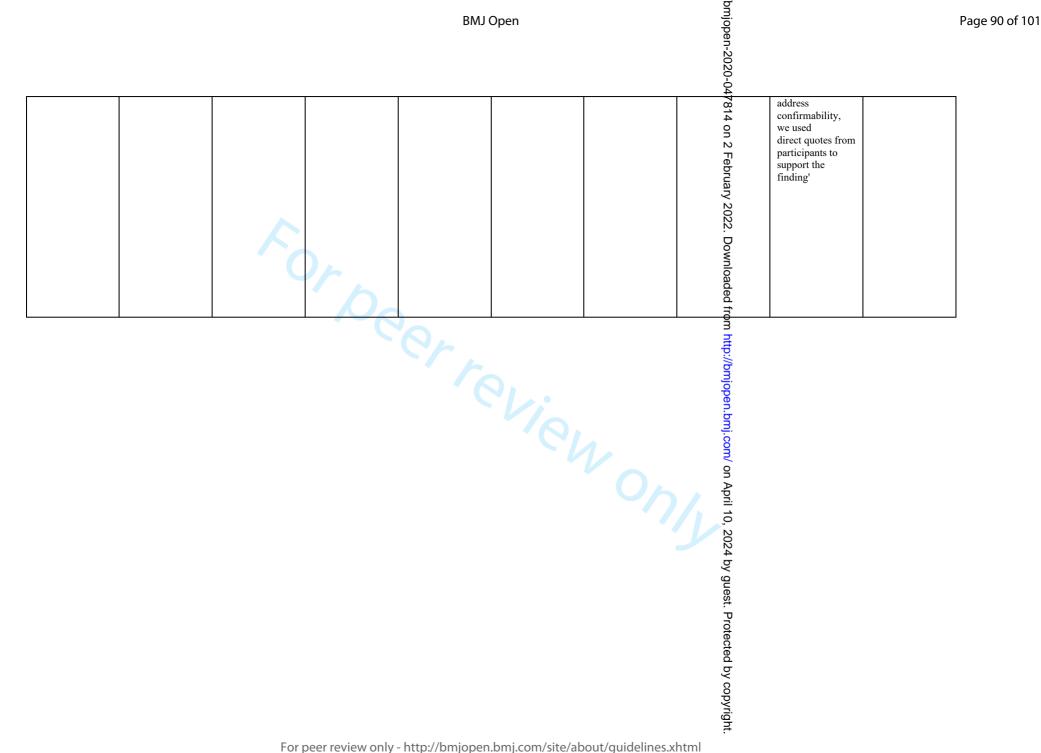
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. _ -	prehospital clearly stated, and their importance justified. coping and support from the perspective of ambulance personnel Oliveira et al. 2019 ⁵² clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in	explain why semi-structured interviews were chosen over other qualitative	14 ambulance personnel. Participants were recruited from seven institutions, mainly on the basis of 'having an active status on a rescue team and being willing to talk and share their experiences'. Details of how participants were recruited are not provided, and non-participation was not	relation to the critical incident technique- where 20 interviews (of 2-4 CIs per interview) provide sufficient data. The authors included 22 participants. Interviews took place at the participants' local professional organisation, and were all conducted by the first author. Semi-structured interviews were conducted with participants following an interview guide, details of which are provided by the authors. The choice of semi-structured interviews was justified as it allowed the authors 'to obtain in-depth information regarding participants' prehospital emergency experiences'. Interviews were audio-recorded and transcribed. Saturation of data	acknowledge the possibility of researcher bias during the coding process, and therefore they discuss their analyses with	project was approved by the Portuguese Red Cross and by the University's Ethics Committee Written consent to participate in the study and to audio-record the interview was obtained, as follows: 'We sent a cover letter to all selected structures, explaining the aim of the study, the procedures, the ethical issues guaranteed, the voluntary character of the participation and the possibility to withdraw at any	The authors use Braun an Clark's analytic approach, and outlies the process in detail. This includes explaining how themes were derived from the data. Data collection was performed until saturation was reached. Data was discussed between the researchers during coding, enhancing credibility. The researcher bias: 'Furthermore, to reduce researcher bias; 'Furthermore, to reduce researchers to discuss the concern to engage with other researchers to discuss the process of data analysis and to illustrate themes with verbatim descriptions.' Sufficient data are	presented as themes. The researchers provide participant quotations to support their findings. Multiple analysts discussed the analytic process to reduce	make recommendations to ambulance organisations to improve the psychological wellbeing of their staff. The authors also provide multiple avenues of recommended

							presented		
							support the		
							findings, 2 nd		
							contradictory data		
							are taken into		
							account.		
Exploring	Aims of study are	The authors don't	8 paramedics.	Semi-structured	The recruitment	'This study	The authors used	Quotations are	The researchers
paramedic	clearly stated, and	explain why	The recruitment	interviews were	messages mention	received ethical	construct ist	interspersed	consider their
communication	their importance	semi-structured	strategy is	performed with	that the researcher	approval from the	grounded theory	among the results	findings in
and emotional	justified.	interviews were	explained in	participants, but	previously	University of	in their a lytic	which are	relation to
expression in the	Qualitative	chosen over other	detail.	the researchers do	worked as a	Edinburgh's	process. Nae	presented as	existing literature.
workplace after	methodology is	qualitative	Participants were	not justify why	paramedic. The	Usher Research	authors are	themes.	They also make
responding to	appropriate due to	methods.	recruited over	interviews are	researchers	Ethics Group.	transpare	Credibility was	various
emergency calls	nature of the		facebook groups.	chosen.	acknowledge the	Each participant	how then ≥ s are	enhanced through	recommendations
Drewitz-Chesney	aims, which is to		'Participants were	Interviews were	possibility of	provided verbal	generatec from	the use of	for emergency
et al. 2019 ⁵³	explore subjective		sampled using	conducted using	confusion and	and written	the data.'	triangulation with	service
	experiences in		convenience, then	Skype, and	bias that can arise	consent. To	Credibili y was	leading members	organisations,
	detail.		purposive	participants could	from this,	minimise the risk	enhanced hrough	of the	relating to post-
			sampling.	choose to	although this was	of psychological	triangula ⊞ on,	organisation.	incident
			Convenience	interview via	minimised by the	impact,	including		organisational
			sampling enabled	video or audio	fact that the	participants were	interviewing the		interventions that
			initial	only. An	researcher didn't	never asked to	manager of the		could protect
			recruitment.	interview guide is	work with any of	recall specific	BCEHS ES		paramedic
			Snowball and	provided.	the participants.	calls or details.	program, Marsha		wellbeing.
			quota sampling	Interviews were		Participants were	McCall, and		
			were the two	audio recorded		monitored for	Anonymous, a		
			forms of	and transcribed,		signs of distress	retired BEHS		
			purposive	and data		during each	paramedic whom		
			sampling used.'	collection was		interview (none	substantiaed		
			Authors are not	stopped once		were noted).	some participant		
			clear on which	saturation was		BCEHS	data . Thi g k		
			attributes are	reached.		paramedics have	descriptions and a		
			sampled for. The			access to three	diverse sample		
			authors justified their choice of			services offering	contributed to		
			participants by			support and counselling.	credibilit and		
			saying that 'when			These services	transferal dity. An audit trail was		
			sufficient			were listed on	maintained		
			information is			their information	throughout the		
			gleaned from			letters. At the	research process		
			participants, a			conclusion of	which en anced		
			smaller sample			each interview,	dependability.		
			size is required			participants were	Journaling and		
			!			asked if they	bracketing		
						wanted a referral	enriched O		
						to any of the	enriched 🛱 reflexivit g ' 'Each		
						services, which	transcriptovas		
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01					ВМЈ (Open		bmjopen-2020-04		
							all participants declined.'	least three dimes to improve accuracy and familiarity. Sufficient lata are presented support the findings, and contradictory data are taken account.		
	Mental Health in the UK Police Force: a Qualitative Investigation into the Stigma with Mental Illness Edwards et al. 2020 ⁵⁸	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors justify their use of open-ended questions in semi-structured interviews to facilitate meaningful discussion, although the choice of interviews other qualitative data collection methods is not justified.	Five police officers. 'Participants were recruited through a referral from a charity, personal network, police forum and contact from within the police force.' The authors outline the criteria for participant inclusion in the study. They do not however justify their choice for these criteria. Non-participation was not discussed.	Semi-structured individual interviews were conducted using a topic guide, of which the authors provide details. The authors justify their use of open-ended questions. Interviews were audio recorded and transcribed. Data saturation was not discussed.	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	Ethical board approval was obtained, as well as written consent from the participants. The researchers also had measures in place to support participants who experience distress due to participation in the study.	The authors used Braun and Clark's approach of the matic analysis. They out the control of the c	Findings are presented as themes and subthemes. The authors include contradictory data, and discuss this. Discussion takes place throughout the study within the results section, but there is also a separate discussion section.	The authors identify areas where further research would be valuable, such as barriers to help-seeking in male dominated professions. Recommendation s are also made to police organisations, such as highlighting a need to increase mental health awareness.
	Living in Critical Times: The Impact of Critical Incidents on Frontline Ambulance Personnel: A Qualitative Perspective	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to	The authors don't justify why they chose individual interviews over other qualitative methods. They do however justify their use of some closed questions (21 EMTs, 6 EMCs. The qualitative component of this study followed a quantitative Survey. Participants from the earlier study	Setting for data collection is not stated. The authors give examples of the topics discussed during the interview process. The interview	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	No mention of informed consent, ethical approval or methods to ensure confidentiality.	Thematicanalysis was undergaken. 'A random sample of transcribts was read and poded by both authors in order in ensure good reliability and	Findings are presented as themes. For each theme, a range of relevant quotations are provided to support this theme. Credibility	The authors make recommendations to police organisations for post critical incident support for staff.
								opyright.		

				ВМЈ	Open		bmjopen-2020-04		
Gallagher et al. 0007 ⁵⁴	explore subjective experiences in detail.	to elicit background information and to facilitate comparisons across participants.)	were asked if they would be willing to participate in qualitative interviews. Non-participation is not discussed.	schedule used was created with the help of a literature review and the findings from the quantitative component of the study. No justification for the choice interview method is given. The interviews were audio recorded and transcribed.			validity. So is not clear how the themes were derived from the data. The puthors don't critefally evaluate their own role of the analytic process. Contradictory data are then into account- for example when giving examples of participant quotations with conflicting attitudes. The researches don't critically examine their own ole. Sufficient data are presented os support the findings. o	of findings is not discussed.	
Police officers, nental (ill-) ealth and poiled identity bullock et al. 018 ⁵⁹	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	Researchers justified their use of telephone interviews: '. While telephone interviews are often depicted as a less attractive alternative to face-to-face interviewing, telephones may allow respondents to feel relaxed, more able to disclose sensitive information and there is little evidence that they produce lower quality data '	52 police officers, two police staff, four Police Community Support Officers (PCSOs) (four) and one special constable. Participants were recruited from six police constabularies in England and Wales. 'Individual participants were identified by virtue of their contribution to an online survey on the nature of work-related injury in which	The researchers explain in detail how the telephone interviews were conducted. Open questions were asked by the participants. Saturation of data is not discussed. 'All interviews were digitally recorded, professionally transcribed and anonymized. '	The researchers acknowledge that the nature of the interview is sensitive, and that the nature of telephone interviews would make participants more comfortable disclosing such information.	'The nature of the interviewing was inevitably sensitive and mechanisms were put in place to mitigate that; for example, interviewees were provided with the contact details of sources of support.' There is no mention of ethical board approval, informed or methods to protect patient confidentiality.	The authors use Braun and Clark's thematic analysis approach and give a very brief overview of the approach but they do not give examples af how themes were derived from the data. The versearches didn't critically examine their own fole. Sufficient data are presented to support the findings, and contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic ary data are taken are properties of the contradic are properties of the contr	The findings are presented as themes. For each theme, the authors use participant quotations as well as relevant literature to discuss the context surrounding the quotations. No efforts to enhance credibility are discussed.	The authors mare commendation to police organisations based on their findings surrounding stigma. No recommendation for research are made.

				ВМЈ	Open		bmjopen-2020-04		
'You see a baby	Aims of study are	The authors	they identified themselves as willing to participate in a full-length interview'. This study is part of a wider project. Non-participation was not discussed.	Interviews were	'The research	Confidentiality	saturation on saturation of sa	Findings are	The authors make
die and you're not fine:' a case study of stress and coping strategies in volunteer emergency medical technicians Folwell et al. 2018 ⁵⁵	clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	justify their choice of in-depth interviewing technique as they 'hope to gain a deeper understanding of the lived experiences of voluntary EMTs'.	Participants were recruited from one county in a Western state. It is not clear how the participants were selected, and non-participation is not discussed.	conducted in a private space of the participant's fire department. Justification for choice of interview setting was not provided. In-depth interviews were performed with participants, using an interview guide. This was chosen to "gain a deeper understanding of the lived experiences of voluntary EMTs". Saturation was reached by the end of the study. Interviews were audio recorded and transcribed.	team consisted of a female Caucasian professor who holds a doctorate and a male Caucasian undergraduate student with three years' experience as a volunteer EMT. While some of the interviews were conducted by both members of the research team, most interviews were conducted by the volunteer EMT'. Other than providing these details, Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	was guaranteed by the authors as the transcripts were anonymised. There is no mention of ethical board approval or informed consent.	describe the process of constant a comparison analysis. The work researches independently read all the transcripts and collaborated to discuss findings. The authors are very transparent about the malytic process. The contradictory data were discussed, such as in the example of participates discussing the pros and cons of CISD. Sufficient data are possible findings. By guest. Protected by copyright.	presented as themes and sub- themes. 'To enhance credibility, member validation was performed in which a summary of findings and initial interpretations of data were given to five participants to confirm the researchers accurately depicted viewpoints and experiences. To enrich transferability, we provided detailed descriptions of participants and research sites. To improve dependability, we used the same protocol for each interview and documented the process of data collection and analysis. To	four detailed recommendations to the specific EMS organisation with which the study was involved. The authors also make recommendations for future research.



Appendix A- Abbreviations and definitions

Abbreviation	Meaning
NHS	National Health Service
PTSD	Post-Traumatic Stress Disorder
ESW	Emergency Service Worker
ESO	Emergency Service Organisation
EMS	Emergency Medical Service
CISD	Critical Incident Stress Debriefing
UK	United Kingdom
TRiM	Trauma Risk Management
GMB Union	General, Municipal, Boilermakers and
	Allied Trade Union
RTA	Reciprocal Translocation Analysis
CASP	Critical Appraisal Skills Programme
EMT	Emergency Medical Technician

Term	Definition		
Psychologi	'the unique discomforting, emotional state experienced by an individual in response		
cal distress	to a specific stressor or demand that results in harm, either temporary or permanent,		
	to the person' ⁴⁵		
Critical	'any event with sufficient impact to produce significant emotional reactions in people		
incident	now or later'.9		
Supervisor	EMS frontline personnel responsible for overseeing a 'crew' of EMTs/paramedics. Brown University- Roles And Responsibilities Of Supervisory Staff. [internet] 2021[cited 2021 June 1]. Available from: https://www.brown.edu/campus-life/health/ems/roles-and-responsibilities-supervisory-staff#:~:text=EMS%20Supervisors&text=The%20EMS%20Supervisor%20is%20the,and%20appropriate%20emerge ncy%20vehicle%20operation.		
Mental	A member of an organisation raising mental health awareness within the workplace 98		
health champion			

Type of stigma	Definition
Anticipated stigma (Perceived stigma)	'the extent to which people believe they personally
	will be viewed or treated in a stigmatizing way if
	their mental health problem or related help-seeking
	becomes known' 77
Treatment stigma	'the stigma associated with seeking or receiving
	treatment for mental ill health' ⁷⁶
Internalized stigma	'holding stigmatizing views about oneself' ⁷⁶
Public stigma	'invalidating and unjustified beliefs (i.e., prejudices
	and endorsed stereotypes) about others'83

Appendix B: Literature search terms

(((mental AND (health OR well?being)) OR (trauma* OR *stress OR recover* OR PTSD OR post?traumatic?stress OR emotion* OR (critical AND incident) OR (traumatic AND incident) OR (traumatic AND event) OR experience* OR support* OR *support) AND (emergency service* OR emergency medical service* OR EMS OR first responder* OR ambulanc* OR paramedic* OR firefighter* OR fire service* fire department* OR police*) AND (qual* OR mixed?method* OR interview* OR focus?group*) NOT (quality OR emergency?department)

((emergency service* OR emergency medical service* OR EMS OR first responder* OR ambulanc* OR paramedic* OR firefighter* OR fire service* fire department* OR police*) AND (qual* OR mixed?method* OR interview* OR focus?group*) NOT (quality OR emergency?department)) AND ((help-seeking* OR stigma* OR mental* OR barriers OR (MeSH terms: help-seeking behaviour, social stigma, mental health, psychiatry, social support, mental disorders))

Appendix C: Data extraction template

Citation

Reviewer

Country

Aims

Ethics – how ethical issues were addressed Study setting- e.g. type of organisation

Relevant context to study setting

Socio-demographics of the country / region

Recruitment context (e.g. where people were recruited from)

Sampling- what sampling methods, what were inclusion and exclusion criteria,

Data quality rating

Participants- 'population described'

Participants- 'characteristics'- age, sex etc

Theoretical background

Proportion of sample exposed to critical incidents/ definition of critical incident/ anything relevant to the study matching my selection criteria

Definition of critical incidents/ something related

Data collection methods- data collection methods, role of researcher within setting...

Data analysis approach- how many researchers, how did they code, how were findings corroborated,

Themes identified in study (1st order interpretations)- Help-seeking

Themes identified in study (1st order interpretations) – Mental Health recovery

Data extracts related to key themes- Help-seeking

Data extracts related to key themes- Mental health recovery

Author explanation/interpretation of key themes (2nd order interpretations)- Helpseeking

Author explanation/interpretation of key themes (2nd order interpretations)- Mental health recovery

Recommendations made by authors (both outcomes; but specify)

Third order interpretations:

Other potentially relevant information

Appendix D: Example literature quotations used to construct themes

Facto rs contri buting to menta l health recove ry post traum atic incide nt expos ure	Organ isatio nal	Time out/Downt ime	They prefer support to be offered immediately after the call and find that downtime after a stressful call allows them to decompress and prepare for the rest of their shift: 'we knew we weren't going to get a call right, so we knew we had the two hours, so we watched a funny show and had a napButlike for me personally that's exactlywhat I needed.' Participant 4 from focus group 4. Douglas et al. 2013 our supervisor took us out of service for a couple of hours and let us go have lunch, sat down and had lunch and just kind of relax and talk amongst ourselves, not even about the call, just about whatever, just to kind of relax. Before we went back on shift. Certainly we could have booked off the rest of the day, you know, on stress leave or whatever, but we all, found that just having, just being able to have a couple of hours to, kind of, you know, relax a little bit, that helps us a lot.' (Focus group #520–522) Halpern et al. 2008 I like didn't want to be like I need to take a couple of hours off because I did not want to look bad in front of the supervisorParticipant 2 from focus group 2. Douglas et al. 2013 Unfortunately, paramedics often do not have adequate time to talk. Several participants expressed their frustration over 'calls waiting'. These calls are waiting to be dispatched as no crew is available. When BCEHS paramedics offload their patient(s) at the hospital, dispatch can immediately send them to a waiting call. This can limit paramedics' ability to discuss CIs. James desired: to be given the time uninterrupted, unbothered Give us our time to decompress. Drewitz-Chesney et al. 2019
		Superviso r	=

	Peer support network	Supervisors, however, were perceived differently. Some paramedics reported feeling unsupported when their supervisors questioned why they were reacting to an event that they did not perceive as traumatic: I wasn't really involved in a traumatic event because there was no loss of life, or you know what I mean, um, it, there wasn't really much sympathy the, um, I could, not that I really, um, oh, this wasn't, um, a huge accident, you weren't injured, you know, really why are you complaining? Regehr et al. 2007 he's [supervisor] quite an old fashioned sort of police officer, not the bloke you would sort of want to go in and have a chat with about a sudden death you'd just been to If I went in and said 'Governor, can I have a chat about the sudden death?', he'd look at me as if I'd just asked to kill one of his children! Evans et al. 2013 Nurse I "Therefore, talking to a person who has the same skills, abilities and knowledge you have would probably be more meaningful". Carvello et al. 2019 The majority of nurses is in favour of peer-supporters. The motivation is based on the fact that they recognise the peer-support as someone that can understand what nurses really mean when relating a traumatic event,
Informal support	Colleague s and family	being one of their colleagues. Carvello et al. 2019 The more you talk about something, the more it becomes something you've told and your telling becomes part of the memory, as opposed to it being a really shiny, vivid thing inside your head*those images. Evans et al. 2013 I don't think talking about it to people at work is the release, the escape I need it's speaking to people who I care about and who care for me and just having that comfort zone, that's what's important to me. [P16] Evans et al. 2013 I never tell my wife that, I would never tell her that because I just think that would have really put the frighteners on her. [P15] Evans et al. 2013
	Regular partner	For me it's just always been that partner, because they're right there with you and they'll know what's going on, and you really want somebody that can understand what's happening. Jessica et al. 2009 for those of us that have regular partners, regular stations, rely on your partner They're gonna know if something's up with you. Drewitz-Chesney et al. 2019 Paramedics working with different partners may be unable to recognise changes as readily as they would in a regular partner. When paramedics are without a regular partner or are uncomfortable speaking with their

current partner, they often don't discuss calls. Instead, some participants said they speak with long-time paramedic friends or coworkers with whom they have similarities, ie. age or training level.

Drewitz-Chesney et al. 2019

...if I'm working with my regular partner, those communication lines are very, very open and we can talk about the tough calls, how we're feeling, if there's anything we would have done different [sic] (Sean).

Drewitz-Chesney et al. 2019

I really envy the paramedics that have regular partners that they know, and they trust, and they can talk to (Krista).

Drewitz-Chesney et al. 2019

...I would have a regular partner and that partner would be someone who is just like family to me. We would just talk about everything, without even hesitating...'

Drewitz-Chesney et al. 2019

Reassuran ce and validation

I remember going to the hospital and I remember I was disappointed because the parents weren't there at that time...And I don't know what it was. It was just something that made me feel like I just needed to talk to them. But I never ended up talking to them. So anyway that call definitely stands out as being...(Stuck with you.) Yeah. Halpern et al. 2009

And it's weird, I looked in the newspaper. I saw his funeral announcement and I went to the funeral. (Oh okay.) I didn't talk to any of the family. I just went for my own, I don't know why ... I, for some reason, I guess I felt I needed to follow up and so I did. And I sent the family a condolence card and then a friend of mine ... met a friend of the family's friend and he had said, oh, his [relative] wants to talk to you ... So she called me and she wanted to know, like, you know, what happened with her [relative] and who was the last one to talk to him ... It's kind of funny because there are so many calls you do and you never think about them again. But this one, I thought about him a lot. I guess because he was so young and again, I really didn't think he was going to die. So I thought, okay, well, you know, he's at the trauma centre now and I had no idea that he was that badly injured. And then he died. So I think that freaked me out. I wasn't prepared for that. And I thought, oh my God, he's so young and his family wasn't there. I felt badly his family wasn't there and then. So that one stuck with me for a while.

Interviewer: "And talking to his [relative], did that help or ...?"

It more, I felt it was helping them so it made me feel better, because she really, really was upset. And I felt she wanted, I think she felt a lot better after talking to me and hearing something about what happened. And so it made me feel better to give them some kind of closure.Pg 181-182 Halpern et al. 2009

Facto rs influe ncing	Natur e of interv ention delive	Mandator y vs non- mandator	the day after that call, my supervisor kind of sensed that I wanted to talk to him and I don't know why, you know, he came to the hospital. But it was the next day and he was kind of like, so pull up a chair, sit down. Let's just talk. And it was like I wanted somebody just to say to me, okay, this is your time and you can talk right now and I'm not going to judge you. I'm not going to talk about anything. I'm going to let you just have your 10 minutes. And that made a huge difference. I have the utmost respect for my particular supervisor Whether it was talking specifi cally about the call or just having a little bit of a "hey you're okay at your job", type comment. (Participant #122) Halpern et al. 2008 We had counselling every six months and everybody used to go 'Oh I've got to see the counsellor this week', but I tell you what we all quite enjoyed it I was so much calmer after speaking to her but it's something I'd never have done had I not been made to do it. [P12] Evans et al. 2013
help- seekin g behav iour	delive ry	y	Evans et al. 2013 My emotions are none of your business and if I wanted to share my emotions with you, I'm going to share [them] with someone I trust Participant I from focus group 1. Douglas et al. 2013
		Shared experienc es with interventi on provider	FRs in our study preferred a MH professional with experience as an FR or military veteran. Many also approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member. Jones et al. 2020 I've been to [therapy] a couple of times The guy that I got was excellent, but I only think it was excellent because he was prior military (P8, Firefighter ×22 years). Jones et al. 2020 (study 4) someone I think understands what's going on, and has been through what I've done Participant 3 from focus group 4. Douglas et al. 2013

Stigm	'Macho	I think there's a real element of machismo and masculinity in the police
a as a	culture'	force and it's a bit, sort of a faux pas to admit that things have really
help- seekin		affected you If I'd have come out and said 'ah you know, that really affected me badly, let's go and sit down and have a cup of tea and talk
gbarri		about it' I think you're straying into pink and fluffy territory there saying
er		'that made me feel sad' is a bit too far. [P3]
Specif ic		Evans et al. 2013
barrie		
rs		Everyone wants to be tough and strong. Maybe that was my downfall or problem at the time and I didn't want to admit that I needed any kind of help. I guess I didn't want to be perceived as weak. (Participant #110) Halpern et al. 2008
		that's so ridiculous. You need to harden up if you want to do this job, and old people die. Drewitz-Chesney et al. 2019
		Diewitz-enesitey et al. 2017
		in metro, there's a lot morebravado and joking around about thingsIf you can get one on one with someone, they're usually a lot more receptive and a lot more empathetic- (Dennis). Drewitz-Chesney et al. 2019
		Unfortunately there's a massive stigma [] one of my sergeants the other week, there was mental health training coming up and his reaction to being put forward to go on the training was, 'Well what do I want to go and learn how to deal with a load of nutcases for? Bullock et al. 2018
		We are many women at the station so its easier for us to talk about what happened You have to talk about what happened otherwise you can't go on. It's easier than on a station with only men, it's not necessary with any "macho style" so I think it's easier for the men (at our station) to talk about things you must talk about. (A female nurse describes her feelings.) Jonsson et al. 2003
	Stigma and shame	As an institution, they were very very good, in getting me better, at making me understand, but back at work that was a different ball game. You've got your colleagues who are still at work, still running around like idiots and they're like, oh fucking hell, you've had three months off, you know, I should have gone off with stress. (Participant 1). Edwards et al. 2020
		There have been officers that are doing the shift that have shown that they can't deal with situations like that, and been very open about it*and they haven't got the respect from the shift, because the colleagues go 'well, you're on your own if you're working with her, because she'd back away' or whatever. So you don't want to be considered as one of those. [P7] Evans et al. 2013
	Career concerns	I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judged as weak or you might get fired" (P2, EMT/paramedic ×20 years). Jones et al. 2020
		If you've a form of mental health illness you will not get on; you will not be promoted,people will not want you on their section. (Participant 4). Edwards et al. 2020

		I feel scared to declare anything or do anything about anything because will it bite me later on in life? Will it prevent me from doing something ir the police later on? Could it be used against me? will it be used in a negative way later on? Bullock et al. 2018
	Confident iality concerns	I know our department's very, very poor at keeping secrets. So if I put a crew out of service, I have to tell the communications center. Communications says, we're sitting this far apart, Hey X, I just put the 22 car out of service in stress. Every dispatcher in there hears it. Every coreceiver in there hears it. So they hear it. I don't know if they say anything I don't know if they go home and tell all their friends and family. But I don't like that system. There's no quiet way of doing it. (Participant #128 Halpern et al. 2008
		I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judged as weak or you might get fired" (P. EMT/paramedic ×20 years). Jones et al. 2020
		to whom must I speak in the police if I can't trust anyone. So now I'm seeking professional help outside the police . Boshoff et al. 2015
Menta l health literac	Emotional awareness	Some appreciated that difficulties in recognizing and admitting to distress pose significant barriers to accessing support. Recognizing the emotional impact of critical incidents may help to address these barriers. Halpern et al. 2009
y		I didn't recognise it as what it was; I just thought I was grumpyyou don see them creeping up, and in the end, the thing that tips you over the edge the thing that makes your bottle overflow if you like can be something qui small because you've got used to dealing with stuff. (Participant 5). Edwards et al. 2020
	Education and stigma	I think for, for everybody, is, here's my thought towards your process, is giving them the tools. People are going to be very tough and say, yeah, yeah, fine. But you know if you could somehow identify the emotions that go along with these calls hat might be starting to put you on tiltThen you can teach people to be aware of them and say, hey, you know what, it's okay to say, I need to talk to someone. Halpern et al. 2009
		In particular, it would appear from this study that teaching ambulance personnel about the emotional aspects surrounding different types of critical incident may diminish their confusion about which incidents they can expect to impact them. Halpern et al. 2009
		I guess that's the main two [barriers], pride and then denial But, it's just education. Just letting [FRs] know, look, these things are normal. It's going to happen to somebody" (P11, Firefighter ×8.5 years). Jones et al. 2020

Knowing that other people are there dealing with that same stuff. You can bounce ideas off each other, see what's worked in their situations and what hasn't . . . you realize you're not crazy (P12, EMT/paramedic ×14 years). Jones et al. 2020

If you could actually get people in in front of officers saying, 'I was one of those people that didn't believe stress could ever get to that level and it was ridiculous and you just needed to work harder', maybe officers would accept that from another officer more than just somebody standing in front of you training because it's getting officers to accept that actually it's okay, you're only human and your body and your mind can only take so much, and maybe they'd accept it more then.

Bullock et al. 2018



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Mental health and help-seeking among trauma-exposed emergency service staff: A qualitative evidence synthesis

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Abstract

Objectives

To identify factors and contexts that may contribute to mental health and recovery from psychological difficulties for emergency service workers (ESWs) exposed to occupational trauma, and barriers and facilitators to help-seeking behaviour among trauma-exposed ESWs.

Background

ESWs are at greater risk of stressor-related psychopathology than the general population.

Exposure to occupational stressors and trauma contribute to the observed rates of post-trauma psychopathology in this occupational group with implications for workforce sustainability.

Types of organisational interventions offered to trauma-exposed ESWs are inconsistent across the UK, with uncertainty around how to engage staff.

Design

Four databases (OVID MEDLINE, EMBASE, PsycINFO and SCOPUS) were systematically searched from January 1 1980 to March 2020, with citation tracking and reference chaining.

A modified Critical Appraisal Skills Programme tool and quality appraisal prompts were used to identify fatally flawed studies. Qualitative studies of trauma-exposure in frontline ESWs were included, and data was extracted using a customised extraction table. Included studies were analysed using thematic synthesis.

Results

A qualitative evidence synthesis was conducted with 24 qualitative studies meeting inclusion criteria, as defined by the PerSPEcTiF framework. Fourteen descriptive themes emerged from this review, categorised into two overarching constructs: factors contributing to mental health (such as the need for downtime, peer support and reassurance) and factors influencing

help-seeking behaviour (such as stigma, the content, form and mandatory nature of interventions, and mental health literacy (i.e. emotional awareness, education).

Conclusion

ESWs reported disconnect between the organisations' cultural positioning on trauma-related mental health, the reality of undertaking the role, and the perceived applicability and usefulness of trauma interventions. Following traumatic exposure, ESWs identify benefitting from recovery time and informal support from trusted colleagues. A culture which encourages help-seeking and open dialogue around mental health may reduce stigma and improve recovery from mental ill health associated with trauma exposure.

Keywords: Qualitative research, mental health, emergency service workers, thematic synthesis, psychological trauma, qualitative evidence synthesis

Strengths and Limitations

- -This is the first qualitative evidence synthesis of traumatisation and mental health help-seeking in ESWs.
- A user advisory group of ambulance management stakeholders and ESWs was involved in the design and purpose of this research.
- -Findings are drawn from pre-Covid literature however core themes are omnirelevant.
- Study quality varied significantly and there is a predominance of ambulance service literature in included studies.



Introduction

Emergency service workers (ESWs) consisting of members of the emergency medical services (EMS), the fire service and the police force, consistently experience poorer mental health outcomes when compared to the general population. While subtle differences exist between occupational groups within emergency service organisations (ESOs), ESWs, also referred to as first responders, experience disproportionately higher rates of post-traumatic stress disorder (PTSD), anxiety, depression and psychological distress. 1-5 Suicide attempts by ESWs are considerably more prevalent than the estimated rate of 0.5% in the general population. Exposure to traumatic events accounts for higher PTSD rates in the ESW cohort,² and is the second most commonly reported cause of poor mental health among UK ESWs in a 2019 survey, following excessive workload.⁷ This review will consider the terms 'traumatic incident/event' synonymously with the term 'critical incident', which is defined as: 'any event with sufficient impact to produce significant emotional reactions in people now or later', as described by Mitchell and Everly. 8 The increased incidence of PTSD in ESW populations^{1,2} is important to appreciate as PTSD is a risk factor for suicidal ideation and risky behaviours in civilian and military populations, 9,10 and increases suicidal risk in ESWs. 11,12 The wider impacts of mental ill health among ESWs include high rates of absenteeism and presenteeism, resulting in significant costs to emergency service organizations.¹³

ESOs employ a variety of programmes to prevent the development of mental ill health in trauma-exposed staff, of which main categories include stress management, psychotherapy and health promotion. 14 Single session critical incident stress debriefing following traumaexposure is a psychological intervention with widespread historical and current use in ESOs. 15-17 However, by the early 2000s, a substantial body of evidence demonstrated that CISD was neutral at best and harmful at worst with respect to preventing PTSD; it appears that CISD interferes with natural recovery. 15,16,18-20 The following two interventions are emerging among UK ESOs, and are examples of prevention strategies hoped to replace traditional debriefing methods. Trauma Risk Management (TRiM) is a peer support system, delivered by trained volunteers within the organisation, ²¹ who assess trauma exposed individuals for risk of mental ill health.^{22,23} The evidence surrounding TRiM's impact on users' mental health outcomes or for improving attitudes to mental ill health is inconclusive. ²³⁻²⁶ Schwartz rounds, best described as a cultural change initiative, also emerging in the UK,²⁷ allow multidisciplinary healthcare staff to share and discuss nonclinical aspects of their work, such as psychosocial, ethical and emotional issues.²⁸ As of May 2020, Schwartz rounds have been adopted by four UK ambulance trusts.²⁷ Schwartz rounds are reported to improve staff psychological wellbeing and increase 'empathy and compassion

for colleagues',²⁹ although they have not been formally evaluated. Other interventions provided by UK ESOs to support the emotional wellbeing of ESWs after attending to critical incidents include counselling and 24-hour helplines,³⁰⁻³⁴ 'defusing' programmes³⁵ which require staff who attended a critical incident to discuss facts surrounding the event in a structured group format, and peer support networks.³⁶

Despite the availability of interventions, ESWs experience barriers to mental health care with one third reporting that they experience mental health stigma, a rate that is higher than the general population.³⁷ The purpose of this review is to identify factors and contexts that may contribute to mental health and recovery from psychological difficulties experienced by emergency service workers (ESWs) exposed to occupational trauma. We were also interested in identifying barriers and facilitators to help-seeking behaviour among trauma-exposed ESWs.

When discussing methods aimed at improving mental health, 'protection' will be used in the context of trauma-exposed ESWs, while 'recovery' relates to ESWs experiencing psychological distress as a result of trauma-exposure. By identifying important contextual factors which help and hinder staff when they access support, and illuminating benefits and drawbacks of current organisational interventions, this review aims to offer qualitative

insights grounded in the perceptions of ESWs, which may help ESOs in decision-making about psychological support for their staff following traumatic incident exposure.

Methods

Methodology

Qualitative evidence synthesis (QES) is a recognised method of integrating primary qualitative research findings in health and social care.³⁸ The methods of this QES are reported using the ENTREQ framework (Supplementary File 1). The research question and final search terms were ratified by a consensus panel of key stakeholders drawn from UK ambulance services and user advisory group of ESWs. This group contributed to the development and refinement of the review questions, search parameters and application of the review findings.

Eligibility criteria

In keeping with qualitative review guidance³⁸, the PerSPEcTiF framework was used to enhance description of inclusion criteria.³⁹ (Table 1)

Table 1: The PerSPEcTiF question formulation framework³⁹

Perspective	Setting	Phenomenon of interest/Problem	Environment	(Optional comparison, not applicable)	Time/timing	Findings
Emergency service workers	Emergency frontline ambulance, police or fire service work	Factors influencing mental wellbeing and help-seeking behaviour	Poor mental health outcomes and elevated rates of mental health stigma within the emergency services	. 27	Following occupational exposure to traumatic event(s)	Emergency service workers' perceptions and experiences regarding the phenomenon of interest

Inclusion criteria:

- (* indicates further information below)
- (1) Study participants were frontline ESWs (studies with mixed populations of eligible participants were included); (2) The study focus was work-related psychological distress*;
- (3) Data collection included primary qualitative interviews, focus groups or observational methods (this included mixed methods studies with qualitative components); (4) Analysis

focussed around participant attitudes towards: a) behaviour aimed at improving or protecting mental health after experiencing a traumatic event OR b) factors which ESWs find helpful or unhelpful for their mental health while experiencing work-related psychological distress; (5) Published in English and peer-reviewed.

No limits were applied to publication date or study location.

Exclusion criteria:

(1) Due to the unique nature of the traumatic events witnesses in this cohort,⁴⁰ studies investigating a military cohort were excluded; (2) Volunteer ESWs were not included.

*The term 'psychological distress will be referred to according to Ridner's definition (see Appendix A).⁴¹

Search strategy

Systematic searches of the following four databases were conducted by the primary author (NA) from January 1 1980 to March 2020: OVID MEDLINE, EMBASE, PsycINFO and

SCOPUS. The first three databases were searched together using the MEDLINE database. In order to avoid duplicates, the SCOPUS database was then searched with an additional filter to exclude MEDLINE results. One reviewer (NA) screened the 13381 article titles and/or abstracts identified by the search. The 42 full text articles identified in this process were then independently assessed for their eligibility criteria by two reviewers (NA and RR), with the aid of RefWorks reference management software. During this process, the two reviewers agreed to exclude 17 studies which did not meet the eligibility criteria. In cases of uncertainty surrounding eligibility criteria, there was a group discussion between all authors. One additional study was excluded on the grounds of low methodological study quality; this was agreed upon by all authors. (Figure 1)

To identify articles missed in the electronic database search, the following methods were employed: 1) Using 'related article' feature (when available), 2) Searching the titles of included studies in google scholar for citation tracking purposes, and 3) Manual searching of the references of relevant studies (reference mining).

Grey literature was searched during background research for context. Two combinations of search criteria (see appendix B) were entered into each database in order to locate relevant literature relating to help-seeking and mental health recovery. The search terms were developed during a process of trial and error using qualitative guidance, ⁴² other reviews in the field, ^{37,43} and virtual consultations with stakeholders and co-authors.

Quality appraisal

One reviewer (NA) assessed study quality using the CASP qualitative checklist.⁴⁴ Studies scoring less than five were further appraised independently by one of three reviewers (RR, MB, JW) to determine whether they should be included in this review based on their conceptual richness, drawing upon five quality appraisal prompts as recommended by Dixon-Woods et al.⁴⁵ One study was removed during this approach⁴⁶ and in keeping with this approach, 'signal' (the relevance of papers to the review's aims) was prioritised over 'noise' (the inverse of methodological quality).⁴⁵

Data extraction

A customised data extraction template (See Appendix C) was created using qualitative data extraction guidance⁴² and that of a similar review as a template.⁴³ In keeping with a thematic synthesis approach,⁴⁷ first order constructs (direct participant quotations) as well as the author's interpretations were extracted in separate sections to allow for a more comprehensive review.⁴² Following Thomas and Harden,⁴⁷ all data relevant to the research aims were extracted into templates by one researcher (NA).

Data synthesis:

The analytical technique of thematic synthesis is an established method in the field of mental health to investigate barriers to help-seeking, and to synthesise qualitative evidence about participant experiences. 37,43,48 Thematic analysis uses inductive line-by-line coding and is focussed around: intervention need, appropriateness, acceptability and effectiveness. 49 It is therefore appropriate given that the purpose of the review is to inform UK ESO guidelines. The extracted text underwent line-by-line open coding, which allows new codes to emerge from the data, rather than imposing a pre-existing framework onto the extracted data. 47 Subsequently, first-level codes were assimilated according to their meanings, similarities and

differences. The codes were then arranged in a 'hierarchical tree structure' during which some codes were renamed as new meanings were generated. For example, some quotations initially coded as 'stigma' were later agreed to more appropriately reflect 'macho culture' or 'career concerns', with 'stigma and shame' relating specifically to shaming practices. This inductive process results in 'descriptive themes'. Two reviewers (NA and RR) performed the initial coding process, but grouping into descriptive themes and interpretation of the data involved discussion between all four authors. To enhance transparency, primary quotations used to construct the themes are supplied in Appendix D. In the final stage of thematic synthesis, the descriptive themes were used to address the review questions. This process involves inferring the meaning behind the data. The final result of this process was the translation of the descriptive themes into implications for ESO wellbeing policy practice, which involved roundtable discussion between all four authors.

Patient and public involvement statement

Patients were not involved the design, conduct, dissemination or reporting of this research.

However, a user advisory group of ambulance management stakeholders and ESWs was

consulted regarding the design and the purpose of the research and advised on questions to

include. We believed patient and public involvement to be of reduced relevance as the impetus for this review derived from the Association of Ambulance Chief Executives, who wished to address an evidence gap to inform policy decisions.

Results

<<insert Figure 1 here>>

Figure 1: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009) Preferred

Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS

Med 6(7): e1000097

Overview of study characteristics

24 studies were included in this review (Table 2). All but two studies^{50,51} employed qualitative methodology only. For these two mixed methods studies, only data from sections related to their qualitative methodology were extracted. The majority of studies (16 of 24) employed a sample of ambulance personnel⁵⁰⁻⁶⁵ followed by police officers⁶⁶⁻⁶⁹ and lastly

firefighters. ^{70,71} The participants of one study, in addition to ESWs, included participants who did not match the selection criteria ⁷⁰, and two studies included a mix of different types of ESWs. ^{72,73} These studies were still eligible as the participant quotations were labelled with an occupational identifier to make it possible to differentiate between eligible and non-eligible participants. The objectives of studies varied widely in terms of relevance to our review aims. Ten of the 24 studies included data relevant to protecting post-traumatic incident mental health, ^{51-53,55-58,61,65,73} and one study included data relevant to barriers and facilitators for help-seeking behaviour related to mental health. ⁷² The remaining 13 studies ^{50,54,59,60,62-64,66-71} included data which were extracted for both of these outcomes.

Study quality:

Study quality varied significantly with data collection, data analysis and discussion of findings being adequately explained in the majority of studies. All studies provided adequate research aims, although fewer than half sufficiently justified the research design. ^{51,53,55,59,} ^{60,65,66,67,69,71,72} The lowest scoring domains were recruitment and demonstrating reflexivity. In few studies the researchers adequately justified their selection of participants ^{51,55,57,67,72,73}

or critically examined their relationship with participants. ^{66,58,62,63,66,72,73} Four studies failed to present ethical considerations. 50,51,64,70

The full CASP appraisal table of all included studies is provided in online supplementary file 2. Following CASP appraisal, six studies^{49,55,57,61,64,70} initially identified as weaker quality underwent further independent quality appraisal by one of three reviewers (RR, MB, JW), during which process one study was excluded.⁴⁹

This qualitative review identified 14 descriptive themes, which are arranged in groups of higher order themes. In turn, these are grouped into one of the following two overarching constructs: 'factors contributing to mental health' or 'factors influencing mental health helpseeking behaviour'. Table 3 presents a summary of hierarchical thematic structure.

Table 2: Study characteristics

Γable 2: Stud	y characte	eristics				
Title of study (Authors, year)	Quality ranking against CASP criteria	Participants	Study aim(s)	Country	Method of data collection	Analysis method
What makes an incident critical for ambulance workers? Emotional outcomes and implications for intervention. Halpern et al. 2009	5/9	N=60 4 supervisors, 54 front-line ambulance workers	To characterize critical incidents as well as elicit suggestions for interventions	Canada	Focus groups/ individual interviews	Ethnographic content analysis
Police officers' experiences of supportive and unsupportive social interactions	6/9	N=19 Police officers	(1) What are police officers' experiences of supportive and unsupportive interactions following	England	Semi-structured interviews	Thematic analysis

following traumatic incidents. Evans et al. 2013			potentially traumatic incidents? (2) Do interactions differ on the basis of the context and source of support (i.e., at work with colleagues and supervisors, or outside of work with family and friends)? (3) How do supportive/unsupport ive interactions facilitate/hinder the processing of traumatic incidents?			
Interventions for critical incident stress in emergency medical services: a qualitative study Halpern et al. 2008	6/9	N=60 4 supervisors, 54 front-line ambulance workers	To explore and describe Emergency Medical Technicians' (EMTs) experiences of critical incidents and views about potential interventions, in order to facilitate development of interventions that take into account EMS culture	Canada	Focus groups/ individual interviews	Ethnographic content analysis
Barriers and Facilitators to Seeking Mental Health Care Among First Responders: "Removing the Darkness" Jones et al, 2020	9/9	N=32 Twenty-five (78%) of the participants were active firefighters, 15 (47%) were certified EMTs, and 11 (34.4%) were certified EMTs/ paramedics.	To explore factors that influenced FRs' perceptions of mental health problems and engagement in MH services.	United states	Ethnographic individual interviews	Content analysis
Exposure to human tragedy, empathy, and trauma in ambulance paramedics. Regehr et al, 2002	6/9	N=18 Paramedics	This mixed-methods study attempts to better understand factors that lead to higher levels of distress among paramedics within the theoretical framework of emotional and cognitive empathy.	Canada	Semi-structured interviews	Thematic analysis
The meaning of traumatic events as described by nurse sin ambulance service Jonsson et al. 2003	5/9	N=362 240 EMTs, 122 registered nurses	The aim of this phenomenological study is to uncover the essence of traumatic events experienced by Swedish ambulance personnel.	Sweden	Written reports	Phenomenologic al analysis
Guilt, shame and need for a container: a study of post- traumatic stress among ambulance personnel	4/9	N=10 Ambulance nurses and ambulance technicians	The phenomenon approached in this study could be described as 'the way ambulance staff experience and handle traumatic events'.	Sweden	Individual interviews	Descriptive phenomenology

Jonsson et al. 2004						
Situation Critical: High Demand, Low Control, and Low Support in Paramedic Organizations Regehr et al. 2007	7/9	N=17 Paramedics	This mixed-methods study involving survey design and qualitative interviews seeks further to understand the factors related to these high levels of occupational stress.	Canada	Long interviews	Constant comparative method
Emergency Medical Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019	8/9	N=17 Paramedics and EMTs	This qualitative study was conducted to increase understanding about the difficulties of responding to pediatric calls and to obtain information about how organizations can better support EMS providers in managing potentially difficult calls.	United states	Focus groups	Directed content
An assessment of the need of police officials for trauma intervention programmes - a qualitative approach. Boshoff et al. 2015	5/9	N=40 Police officials	To conduct a qualitative situational analysis by exploring the experience and specific needs with regards to trauma and trauma intervention of police officials within the North-West Province's specialist units.	South Africa	Focus groups	Thematic analysis
A preliminary investigation of post-traumatic stress symptoms among firefighters Haslam et al. 2003	4/9	N=31 11 firefighters, 8 station officers, 4 sub officers, 4 leading firefighters, 2 fire control officers, 2 area divisional officers	This preliminary study aimed to conduct an in-depth investigation of symptoms cited by fire service personnel and assess potential risk factors for mental health and PTSD.	England	Individual interviews	Thematic analysis
A qualitative study about experiences and emotions of emergency medical technicians and out-of-hospital emergency nurses after performing cardiopulmonary resuscitation resulting in death Fernández-Aedo et al. 2017	4/9	N=13 7EMTs, 6 ambulance nurses	To explore the experiences, emotions and coping skills among emergency medical technicians and emergency nurses after performing out-of-hospital cardiopulmonary resuscitation maneuvers resulting in death.	Spain	Semi-structured individual interviews and focus groups	Thematic analysis
Experiences of and actions towards worries among ambulance nurses in their	7/9	N=25 Ambulance nurses	The purpose of this study was to describe critical incidents in which ambulance nurses experience worry in their	Sweden	Semi-structured individual interviews	Structural analysis/Critical incident technique

						1
professional life: A critical incident study Svensson et al. 2008			professional life and the actions they take in order to prevent and cope with it.			
Exploring the nature of resilience in paramedic practice: A psycho-social study Clompus et al. 2016	5/9	N=7 Paramedics or EMTs	The aim of this study was to explore the question of how paramedics 'survive' their work within the current healthcare climate.	England	Biographical narrative interviews and semi-structured interview with all participants	Thematic analysis
First response emergency care – experiences described by firefighters Abelsson et al. 2019	5/9	N=35 Firefighters	The purpose of this paper is to describe firefighters' experiences of first response emergency care	Sweden	Group interviews	Interpretive qualitative content analysis
Paramedics' experiences with death notification: a qualitative study Douglas et al. 2013	5/9	N=28 Paramedics	To explore paramedics' experiences and coping strategies with death notification in the field.	Canada	Focus groups	Inductive thematic analysis
Peer-support: a coping strategy for nurses working at the Emergency Ambulance Service Carvello et al. 2019	4/9	N=14 Ambulance nurses	The aim of the study is to explore the experiences, the opinions and feelings of emergency medical service nursing staff in relation to the use of the peer supporting model.	Italy	Semi-structured interviews	Not made explicit
Experiences among firefighters and police officers of responding to out-of hospital cardiac arrest in a dual dispatch programme in Sweden: an interview study Hasselqvist-Ax et al. 2019	8/9	N=22 10 police officers, 12 firefighters	The aim of this interview study was to explore firefighters' and police officers' experiences of saving lives in OHCA in a dual dispatch programme.	Sweden	Individual interviews	Critical incident technique
Working in prehospital emergency contexts: Stress, coping and support from the perspective of ambulance personnel Oliveira et al. 2019	8/9	N=14 Ambulance personnel	The purpose of this paper is to explore, from this group perspective, sources of stress, coping strategies and support measures	Portugal	Semi-structured interviews	Thematic analysis
Exploring paramedic communication and emotional expression in the workplace after responding to emergency calls	7/9	N=8 Paramedics	The study aim was to learn about peer communication and emotional expression between paramedics in the workplace, after they respond to calls.	Canada	Semi-structured individual interviews	Constructivist grounded theory

Drewitz-Chesney						
et al. 2019 Mental Health in the UK Police Force: a Qualitative Investigation into the Stigma with Mental Illness Edwards et al. 2020	6/9	N=5 Police officers	The study aims to explore institutional negativity and stigma in the police force towards mental ill health	United Kingdom	Semi-structured individual interviews	Thematic analysis
Living in Critical Times: The Impact of Critical Incidents on Frontline Ambulance Personnel: A Qualitative Perspective Gallagher et al. 2007	2/9	N=27 21 EMTs, 6 EMCs	The principal aim of this second stage of the study was to ascertain, using qualitative methods, the impact of CIs on frontline staff by allowing them to tell their own stories.	Ireland	Individual interviews	Thematic analysis
Police officers, mental (ill-) health and spoiled identity Bullock et al. 2018	5/9	N=59 52 police officers, 2 police staff, 4 PCSOs, 1 special constable	The processes through which some police officers with mental ill-health experience stigmatization.	England and Wales	Phone interviews	Thematic analysis
'You see a baby die and you're not fine:' a case study of stress and coping strategies in volunteer emergency medical technicians Folwell et al.	6/9	N=25 EMTs	This study explores the lived experience of ESP involved in unsuccessful pediatric resuscitation efforts and how this experience affects them professionally and personally.	United States	Individual interviews	Constant comparative analysis

Table 3: Summary of Themes

Domain	Higher level theme	Descriptive themes
Factors contributing to mental health	Organisational sources of support	-Time out/Downtime -Supervisor -Official peer support network
	Informal support	-Colleagues and family -Regular partner -Reassurance and validation
Factors influencing help-seeking behaviour	Nature of intervention delivery Stigma as a barrier to helpseeking	-Mandatory vs non-mandatory -Shared experiences with intervention provider -Macho culture -Stigma and shame -Career concerns
	Mental health literacy	-Confidentiality concerns -Emotional awareness -Education and stigma

1. Factors contributing to mental health

The following themes describe factors which participants attribute to having a direct influence on protecting their mental health or facilitating recovery from mental ill health after traumatic incident exposure.

Organisational sources of support

Three themes were identified as being directly linked with systems put in place by the organisations employing ESWs and represent opportunities for mental health support following trauma exposure over which ESOs have control.

Time-out/Downtime period

A 'time-out' or 'downtime' period refers to a period of time following a stressful call in which ESWs are temporarily placed off duty, the availability of which was inconsistent across the studies. ESWs working in organisations in which they were offered downtime by their supervisors following certain calls reported that these breaks, ranging from 30 minutes to two hours, 53,56 were essential in order to allow them to 'decompress' in preparation for the remainder of the shift. 53,54 ESWs found particular comfort in casual conversation with their

colleagues during this time, which did not necessarily relate to the previous call.⁵³ During such discussion, humour could be employed by the group as a method of distraction and off-loading.⁵⁹ While the majority of ESWs preferred to be in the company of colleagues during this time,^{55,59,60,63} some individuals chose to make use of organisation-provided exercise equipment in order to de-stress.⁶⁵

When time-out opportunities were unavailable, ESWs describe rushing into the next call without having psychologically processed the previous call.⁵¹ In such circumstances, paramedics reported difficulty giving their full attention to the next call, limiting their ability to provide life-saving care.⁶⁴ Contrary to the above findings, one ambulance worker preferred to be dispatched to another call immediately following a stressful call, due to the distraction this provided.⁵³

Supervisor

ESWs have supervisors or line managers, whose roles include acting as a point of contact after a traumatic incident. In an ambulance setting, paramedics were appreciative of the 'genuine concern' shown by their managers or supervisors following a traumatic call.⁵²

Concern was commonly expressed by asking paramedics how they were feeling, and providing them with an opportunity to talk.^{52,53} Not all ESWs want to be approached by their supervisor immediately following the call, as illustrated by the following quote from a paramedic:

'I don't want you to come up and get in my face and say, are you okay? Just leave me alone. Okay. Ask me in a couple of days, am I okay with the call, sort of thing.'53

Occasionally supervisors were responsible for taking an ambulance crew off duty after a call.⁵³ Even if downtime opportunities were available upon individual request, paramedics described not making use of the opportunity unless suggested or requested by the supervisor.⁶⁰ Conversely, a supervisor's influence may also dissuade paramedics from requesting temporary downtime, especially for newer paramedics who were fearful of perceived repercussions linked to an inability to cope.⁶⁰

Paramedics described unsupportive supervisor responses, which could include failing to recognise the traumatising effect of an incident, applying disciplinary pressure after complicated calls,⁵¹ or showing a lack of concern for paramedics' mental wellbeing.^{53,62}

Official peer support network

The majority of ambulance nurses taking part in one study were in favour of peer supporters within their organisation whom the nurses described as being able to understand their distress due to their common experiences. Despite the apparent popularity of the service in this organisation, peer support networks in other organisations were rarely used with defusing occurring 'naturally within the halls' instead. Participants in two studies expressed a hesitancy to make use of peer support opportunities for fear of being judged by colleagues as 'weak'. Other concerns centred around the competence of peer supporters, their ability to maintain confidentliality, and fear of overwhelming colleagues delivering the support.

Informal support

In contrast to organisational factors, three themes emerged related to how informal social factors influence the protection of ESW mental health and recovery from mental ill health.

Colleagues and family

ESWs reported that they found it useful to talk with someone in an informal manner.

53,54,55,57,59,60,61,63,64,66,68,70,71One firefighter described a need to 'vent a backpack', which fills up after each call. Along a similar vein, one study reported suppression to be harmful in the long term since this coping style can obfuscate mental health conditions. The main providers of such informal support were family members and work colleagues, but there were mixed findings in terms of preferences for support.

Many ESWs reported turning to their family members as a primary source of emotional support following difficult calls, ^{66,53,72,50,56,70,59} who were capable of 'selfless listening' without judgement, ⁶⁶ and with whom ESWs felt more comfortable sharing emotional vulnerability compared to colleagues. ^{53,66} However, a number of ESWs reported avoiding talking to their family members about stressful calls out of a wish to protect them from the trauma they experienced, ^{56,58,59,66,70-72} although this did not apply to family members with a first responder/healthcare background, who were judged to be able to understand ESWs' traumatic experiences. ⁵⁷⁻⁵⁹ For similar reasons, ESWs were willing to talk to certain colleagues about traumatic calls. The informal sharing of vulnerability was

reserved for colleagues with whom ESWs shared a bond of trust^{57,58,63,66} and for those more likely to empathise and understand the emotional impact of the event.^{50,53,55-58} Sharing experiences with trusted colleagues provided an opportunity for reflection and to hear different interpretations of the event. The risks of disclosure included reliving distressing events, and potential for feelings to be invalidated when partners felt differently about the event.⁵⁸

Regular partner

ESWs described how having a regular work partner helped their ability to process traumatic events encountered on the job. 51,53,63,72 A trusting relationship between partners facilitated comfortable sharing of vulnerability following traumatic calls. 53,63 Having shared the experience, partners could emotionally support colleagues by allowing them to talk about the call and provide reassurance. 51,72 Having a regular partner could however be a negative influence in the case of an unsympathetic relationship, such as partners who respond insensitively to disclosures of vulnerability. 63 Due to the potential stigma arising from the disclosure of vulnerability within earshot of colleagues, the process of 'defusing' between

partners, following a call, commonly takes place within the private space of the ambulance, when returning to base and while awaiting the next call. ⁶³

Reassurance and validation

Reassurance, provided by colleagues indicating that they would have acted in the same way^{52,54,58} or by receiving praise for their actions from their supervisor,⁵³ were valued by ESWs following traumatic incidents, especially those involving fatalities.⁵³ Reviewing the technical aspects of calls with other ESWs provided reassurance that the final outcome was unavoidable.⁷¹ In cases of suicide, learning about the preceding circumstances could provide closure for some ESWs.⁵³ Following fatal accidents, paramedics also described needing to visit family members in hospital or to attend funerals.⁵²

2. Factors influencing help-seeking behaviour

The following themes reflect the barriers and facilitators to help-seeking following occupational traumatic exposure.

Nature of intervention delivery

Two themes emerged related to how the method in which a formal intervention is offered can influence attitudes towards engagement.

Mandatory vs non-mandatory

The decision to employ optional or mandatory organisational mental health support for ESWs following traumatic calls was raised in several of the studies and often depended on the timing of delivery following the incident. Some participants resisted mandatory organisational mental health support following traumatic calls; police officers expressed a need to 'feel in control of the decision to talk' due to the stigma surrounding any disclosure of vulnerability. 66 Mandatory interventions for ESWs could lead to a rejection of the intervention, 53,60 as illustrated by the following paramedic quote:

'My emotions are none of your business and if I wanted to share my emotions with you, I'm going to share [them] with someone I trust...⁶⁰

Others however believed mandatory interventions would reduce stigma associated with their use, 60,66 and prevent delays to help-seeking due to the stigma associated with disclosing vulnerability. 53 Police officers who were initially reluctant to participate felt 'calmer' and expressed gratitude after attending a mandatory counselling service. 66 EMS staff in one study suggested limiting mandatory support to certain types of incident, such as those involving children. 53

Shared experiences with intervention provider

Therapists with a background in the emergency services or the military, or trained peers, were preferred by ESWs⁷² because of the belief that they are more likely to understand their problems and experiences.⁶⁰ This finding was observed across the emergency services:

'Many [participants] also approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member.'72

Stigma as a help-seeking barrier

'Macho' culture

Stigma associated with the disclosure of emotional vulnerability related to traumatic calls, and mental health issues. 50.53.54.59.60.62.63.64.66.68.70 was identified across the emergency services. A 'macho' attitude and culture acted as a key barrier to disclosure where there was an expectation to 'deal with it'.63.68 Disclosure of vulnerability in such a culture was perceived as a weakness and responders were viewed as unable to cope with the demands of the job as a first responder. 53.59.60.63.66.69.70 Revealing one's feelings was perceived to be emasculating and prevented ESWs from talking about their feelings and seeking support 60.66.70 as demonstrated by this quote from a police officer:

'I think there's a real element of machismo and masculinity in the police force and it's a bit, sort of a faux pas to admit that things have really affected you ... If I'd have come out and said 'ah you know, that really affected me badly, let's go and sit down and have a cup of tea and talk about it' I think you're straying into pink and fluffy territory there ... saying 'that made me feel sad' is a bit too far'.66

Stigmatising attitudes held by senior organisational members were influential as they prevented ESWs from contacting their supervisors to seek support. Discussing stress in this culture was described as 'taboo'. Les ESWs often avoided talking to their colleagues about their emotions following traumatic calls. Police officers described how 'tough' colleagues working in such a culture have died by suicide. Some organisations described a contrasting culture in which openness about emotional vulnerability was regarded as a strength.

Two studies identified a connection between elements of the 'macho' culture described, and the gender of ESWs. Swedish ambulance nurses reported that organisations where there was a higher proportion of women fostered a culture of openness with respect to sharing vulnerability.⁵⁰ Of a small sample of seven paramedics, Clompus et al. noted that female participants were more likely than male participants to have made use of formal mental health support mechanisms.⁵⁹ The authors attribute the gender bias in accessing support in this study as being related to 'masculinised paramedic culture'.⁵⁹

Stigma and shame

This review identified that the fear of being shamed by being labelled as 'malingerers' 68 or 'the lazy and the lame' 69 resulted in presenteeism when officers remained on active duty although mentally unwell. Mental health stigma appears related to the belief that affected individuals are less competent in their responsibilities as an ESW as well as being unreliable. 69 Police officers described a common belief that 'you're on your own' working a shift with a colleague who has been open about the emotional impact of traumatic calls. 66 ESWs who have been open about their mental health diagnoses describe being labelled as 'mad' 67 or a 'crazy guy'. 72 Such attitudes may result in shame and the avoidance of help-seeking.

Career concerns

Four studies report that police officers delay help-seeking for mental illness due to concerns about the perceived impact of disclosure on their careers ⁶⁶⁻⁶⁹ Officers believed that being labelled with a mental health condition would obstruct career progression. ⁶⁷⁻⁶⁹ Officers feared being removed from 'public-facing operational roles', and/or feared a reduction in pay which related to being removed from frontline duities. ⁶⁸ Fear of involuntary dismissal due to disclosure and help-seeking was also reported by study participants from the fire service. ⁷⁰

Confidentiality concerns

Concerns regarding confidentiality were a barrier for ESWs to formal and informal help-seeking behaviour. Formal support services were viewed with suspicion by police officers ⁶⁷ while other officers felt they might be monitored or labelled as 'weak' if they sought a referral to wellbeing services. ⁶⁶ Concerns about confidentiality were also raised by firefighters, who therefore requested preference for an anonymous counselling service outside of the brigade. ⁷⁰ In the emergency medical services, EMTs expressed concerns about loss of confidentiality through the organisation-provided peer support network; ⁶⁴ similar concerns were expressed by EMTs towards critical incident stress debriefing (CISD). ⁶⁵ There are also perceived risks of confidentiality breaches in informal settings as described by one paramedic:

I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judged as weak or you might get fired.⁷²

Confidentiality concerns could also indirectly influence help-seeking or the provision of support. For example, ambulance supervisors wishing to put their crew on a time-out after a traumatic call could be dissuaded by knowing this information could be disclosed to dispatchers.⁵³

Mental health literacy

Emotional awareness

Participants and authors of the included studies recognised a need for more training and education about mental health related issues for ESWs and family members and supervisors, who may be in a better position to detect behavioural changes associated with mental ill health and could facilitate help-seeking. 52,53,64,72 Such education should focus on increasing ESWs' ability to detect emotional or behavioural changes within themselves, which could facilitate help-seeking behaviour. 52,64,64,67,72 ESWs expressed a desire to be informed about the types of emotions which could be triggered by work-related traumatic incidents, 52,64 which may reduce shame associated with help-seeking. 72 Studies revealed that an inability to recognise milder mental health symptoms acted as a barrier to help-seeking with participants

writing them off as being 'grumpy',⁶⁸ and not recognising and admitting to emotional distress.⁵² Additionally, participants were sometimes unaware of the support services available to them^{63,67,72} and were unaware of the benefits of seeking help.⁷²

Education and Stigma

While stigma may indirectly change through improving general mental health awareness, authors also emphasised the value of education to reduce organisational stigma.⁵³ ESWs recommend such education to be delivered regularly in 'brief and efficient' classes of small groups by a peer from outside of the organisation.⁷² Having an awareness of work-related mental health problems among colleagues appeared to be an important facilitator of help-seeking.^{69,72} Experienced ESWs were regarded as being influential in reducing perceived stigma by giving permission to other responders to 'open up'.⁷¹ Police officers in one organisation therefore advocated for mental health 'champions'; colleagues, preferably leaders, who could model vulnerability by openly disclosing their mental illness and work-related distress.⁶⁹

Discussion

This review synthesised 24 primary studies investigating ESW attitudes to help-seeking and protection of mental health and recovery from mental ill health following trauma exposure. The synthesis generated 14 themes relating to 'factors contributing to mental health' and 'factors influencing mental health help-seeking behaviour'. Despite being grouped separately for increased clarity, these overarching constructs are interconnected. Both constructs explore the influence that senior organisational members have on the mental health of ESWs within their organisation. The influence could be positive, such as delivering educational sessions about mental ill health to reduce stigma, or negative, such as the finding that ESWs may not be given downtime after a critical incident. Another interconnecting area relates to the themes of 'macho culture' and 'stigma and shame', as these stigmatising attitudes contribute towards a hesitancy to use official peer support networks.

Help-seeking: culture/stigma

The findings of this review support quantitative findings that fears of a breach in confidentiality related to accessing help for mental ill health and associated career

repercussions pose significant stigma-related barriers to help-seeking for ESWs.³⁷ This is important as any delays in help-seeking can compound or exacerbate mental ill health.^{74,75} Concerns about the impact of mental health disclosure on career progression, professional identity and competence have also been found in military personnel.^{37,43,66,76,77}

Expressing emotional vulnerability, being labelled with a mental health condition and seeking help was equated with a perception of weakness, which contributed to a 'macho' culture. Similar social norms have been described in the military, ^{23,77} which is male dominated with high rates of mental health stigma.³⁷ There are, however, many other similarities between the two settings which are likely to be influential, such as 'norms and values that place a premium on self-reliance in the face of obstacles'.³⁷ Furthermore, these findings may reflect evidence that women are more likely to seek help about their mental health, ⁷⁸ and corresponds with the literature suggesting that men in male-dominated professions are less likely than women to seek mental health support,⁷⁹ and experience higher rates of suicide. 80 Whilst women experience a reduced risk of suicide in male-dominated professions, they experience a slightly increased risk in female-dominated professions, 80 highlighting the complexity of using occupational gender ratios to predict mental health helpseeking behaviours and mental health outcomes. Occupations dominated by hyper-masculine

stereotypes may also disadvantage men who do not identify with these values, therefore discouraging the very demographic who would challenge them.⁸¹ Recruiting a more diverse, emotionally literate and aware workforce, with more women may challenge macho work cultures which prevent ESWs from disclosing their vulnerability.⁸¹

This review's finding of anticipated stigma acting as a barrier to help-seeking, is supported by the findings from a systematic review which found that 'stigma can potentially lead to delayed presentation in mental health care' for ESWs,³⁷ and have an adverse influence on help-seeking in civilian populations. ⁷⁶ These findings are also consistent with a qualitative review of a military setting.⁴³

In terms of attitudes to mental ill, our findings are consistent with Goffman who argued that stigma is defined in and enacted through socially constructed norms. The norms of what is stigmatising and what isn't are socially constructed within a large variety of contexts and have the potential to shift.⁸² An effective way of challenging stigma associated with mental illness and changing negative perceptions is through a strategy of increasing contact ^{23,83-85} in which there is equal status, the opportunity for individuals to get to know

each other, information which challenges negative stereotypes, active co-operation and pursuit of a mutual goal. Such approaches may be helpful to tackle the stigma and culture which prevent ESWs from seeking help. Elements of these factors can already be recognised in organisational strategies such as Mental Health Champions and Schwartz rounds.

Help-seeking: Education

This review identifies a demand for improving the mental health literacy of ESWs and describes the type of education ESWs believe would be appropriate. Mental health education has been shown to be effective at changing attitudes towards mental health disorders when aimed at large populations, smaller at-risk groups or at the individual level. 86,87 Anti-stigma education was introduced in UK emergency services as part of the 'Blue Light Programme', 7 and demonstrated that achieving anti-stigma change at the employee level requires sustained education efforts over a number of years. 7

The literature suggests that certain types of events, such as paediatric fatalities, events involving multiple casualties or suicides, have a higher traumatising potential than others. 50,70,88 The evidence suggests however that the process of developing a post-trauma mental health disorder among ESWs is highly individual, relating to the personal history,

situation, and perspective of the exposed individual,⁶⁵ and ESWs can experience trauma in different ways depending on how they contextualise the victim. ⁵⁰ Questionnaires taking into account individual factors or risk factors, such as the ESW's propensity to dwell,⁸⁹ are therefore a useful resource for predicting post-trauma psychopathology for exposed individuals.⁹⁰

Protecting mental health: Social support and downtime

Consistent with the wider literature, review participants identified the importance of social support following exposure to traumatic incidents. ^{25,43,91,92} Downtime was positively valued by ESWs, yet is not commonly granted to ESWs in practice. ^{92,93} The types of mental health outcome affected by post-incident downtime is disputed. Carlier et al. identified 'insufficient time allowed by the employer to resolve the trauma' was correlated with higher PTSD scores in police officers three months post-trauma, but not at 12 months. ⁹⁴ Having insufficient recovery time following traumatic calls has been correlated with higher emotional exhaustion ⁹⁵ and psychological distress. ⁹⁶ These results are in contrast with the findings of a cross-sectional quantitative survey of the psychological consequences of downtime in 217

ambulance workers, which revealed increasing periods of downtime, up to and including one day, to be significantly associated with lower depression scores, but not with symptoms of post-traumatic stress, burnout and stress-related physical symptoms.⁹⁷

Application of review findings to organisational interventions, policy and research

This review was initiated in collaboration with key ambulance management stakeholders who expressed a need for research to guide decisions about wellbeing interventions for frontline staff, criteria which were expanded by this review to also include fire and police organisations. Our findings have implications for three organisational interventions which are in use or available for use within ESOs.

1) Trauma risk management (TRiM)

Consistent with qualitative findings of navy personnel regarding the implementation of TRiM, ⁹⁸ this review identified a perception among ESWs that peer-support programs are relevant and suitable for their needs, as well as concerns regarding

confidentiality and competence of practitioners of peer support programs. Peer supporters are not however regarded as possessing the same professional competence/credibility of a professional mental health professional. Of note, while review participants expressed concerns about being judged for being perceived as 'weak' by peers in a peer-support system, such a concern was not detected among naval officers towards TRiM,98 despite widespread stigma towards help-seeking and mental health issues in the military.43

2) Mental Health Champions

We identified that awareness of colleagues' mental health challenges could be an important facilitator for help-seeking. The 'Blue light champions' role⁹⁹ therefore appears to be a potentially effective method for improving attitudes, although quantitative evaluation linking these roles with ESW mental health outcomes and culture change is lacking. Staff satisfaction surveys for these roles reveal a lack of support from management and insufficient time available to dedicate to the role.¹⁰⁰

3) Schwartz Rounds

In terms of challenging organisational culture which prohibits help-seeking due to stigma, Schwartz Rounds offer staff the opportunity to disclose their vulnerability whilst fostering a connectedness to other staff. However, Schwartz Rounds have not been evaluated and it is unclear whether they reduce stigma, facilitate help-seeking behaviour, or alter mental health outcomes. Further evaluation of Schwartz Rounds is required.

A note about Covid

This is the first review to qualitatively synthesise the barriers and facilitators to help-seeking in the emergency services, and frontline staff's experience of what may protect and what may hinder mental health after traumatic incident exposure. The search was conducted in March 2020, before the emergence of qualitative literature relating to the Covid pandemic, offering a summary of evidence preceding this significant historical benchmark. Qualitative literature relating to ESW mental health in the context of Covid-19 necessitates analysis in its own right, due to the distinct psychological stressors brought on by the pandemic, such as fear of infecting family members. ¹⁰¹ Healthcare workers experience different mental health pressures

during pandemic-working, 102 and should therefore be studied in a separate context to police and fire workers.

Strengths and limitations

A core strength of this review is the analysis, which includes multiple perspectives on the topic, comprising of a primary care and ambulance clinician, a medical student, and two applied health researchers. A user advisory group including ESWs was consulted regarding the design and purpose of the research and advised on questions to include, broadening its applicability. Limitations include the focus on only English language studies conducted in western countries with the exception of one study.⁶⁷ As such, findings may not generalise to other countries. Study quality varied significantly with research design commonly being inadequately explained. It should be recognised that while the review has applicability to ambulance fire and police services, the majority of studies meeting the eligibility criteria were drawn from an ambulance service background. Only one reviewer performed the initial screen of studies. However, a second reviewer was recruited to independently assess potentially relevant studies against eligibility criteria. Although the included studies are

drawn from pre-Covid literature, the findings are omnirelevant to the issues of traumatisation and mental health help-seeking in ESWs.

Implications for further research to help inform policy

Following traumatic calls, ESWs will likely benefit from a recovery period during which they may wish to access informal support from their colleagues. ESOs should be aware of the therapeutic effects of informal support in the post-incident setting and facilitate its availability since ESWs are unlikely to request downtime themselves. It may also be useful for supervisors to consider that the manner in which they approach ESWs for welfare concerns influences their help-seeking behaviours. It may be important to consider that ESWs report trusting professional relationships, such as regular work-partners, as being psychologically protective against the psychological consequences of occupational trauma experiences. ESWs may benefit from education enhancing their ability to recognise pathological emotional and behavioural changes associated with traumatic incident exposure for themselves and colleagues, and to

able to suggest accessing formal organisational resources and interventions as appropriate. ESOs may wish to consider that mental health champion-type roles, providing staff in such roles are adequately supported, are regarded by ESWs as valuable tools for challenging mental health stigma. Our findings may provide insights into how engagement between ESWs and official peer support networks could be improved, by focussing on promoting anti-stigma and by targeting barriers to help-seeking.

Conclusion

Our review identified barriers and facilitators to help-seeking which may assist emergency medical organisations in improving staff engagement with organisational wellbeing interventions. This is in keeping with the organisation's responsibility to dismantle barriers to help-seeking and reduce stigma related to mental ill health and vulnerability. Our review identified the importance of organisational cultures in which it was safe to be vulnerable and need for supportive and compassionate leadership.

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Figure legend: Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.

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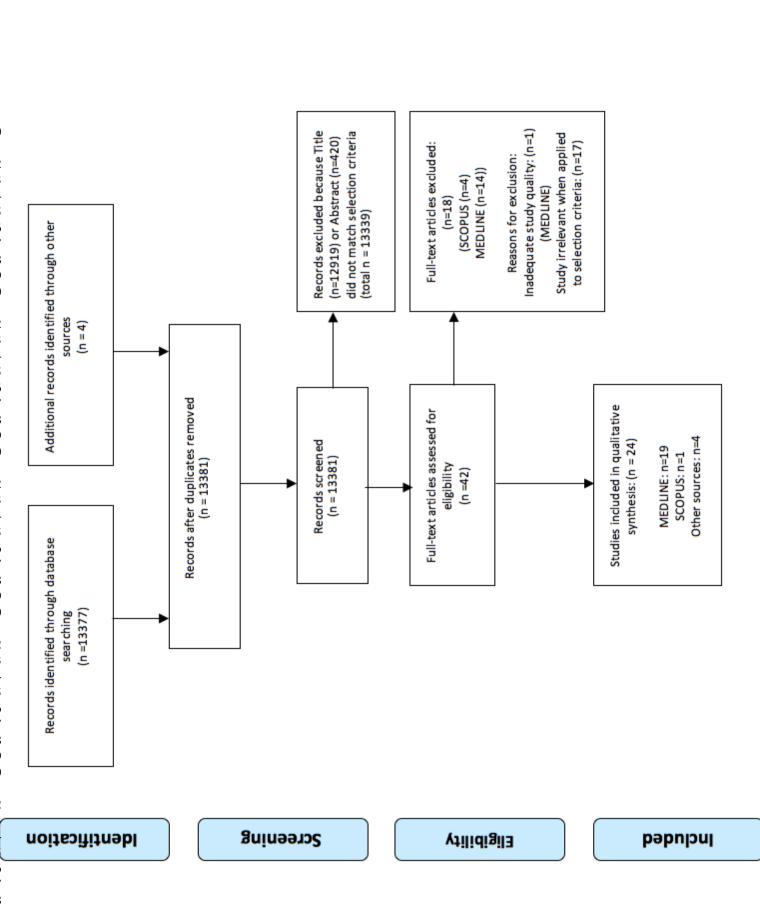
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Online supplementary file 1: ENTREQ checklist (Enhancing transparency in reporting the synthesis of qualitative research

No	Item	Guide and description
1	Aims	-to identify factors and contexts that may contribute to mental health and recovery from psychological difficulties for emergency service workers (ESWs) exposed to occupational trauma -to identify barriers and facilitators to help-seeking behaviour among trauma-exposed ESWs.
2	Synthesis Methodology	Thematic synthesis
3	Approach to searching	Pre-planned comprehensive search strategies, combining database searching with manual search methods.
4	Inclusion criteria	Articles were eligible for inclusion provided they met the following criteria: (1) Study participants were frontline ESWs (studies with mixed populations of eligible participants were included); (2) The study focus was work-related psychological distress*; (3) Data collection included primary qualitative interviews, focus groups or observational methods (this included mixed methods studies with qualitative components); (4) Analysis focussed around participant attitudes towards: a) behaviour aimed at improving or protecting mental health after experiencing a traumatic event OR b) factors which ESWs find helpful or unhelpful for their mental health while experiencing work-related psychological distress; (5) Published in English and peer-reviewed. No limits were applied to publication date or study location. Exclusion criteria: (1) Due to the unique nature of the traumatic events witnesses in this cohort, 40 studies investigating a military cohort were excluded; (2) Volunteer ESWs were not included.
5	Data sources	OVID MEDLINE, EMBASE, PsycINFO, SCOPUS. To identify articles missed in the electronic database search, the following

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6	Electronic search	methods were also employed: -Using 'related article' feature (when available). -Searching the titles of included studies in google scholar for citation tracking purposes. -Manual searching of the references of relevant studies (reference chaining). Grey literature was searched during background research for context but not to locate eligible studies. The two combinations of search criteria (see Appendix A) were
O	strategy	entered into each database. Figure 1 provides an overview of the database search.
7	Study screening methods	One reviewer (NA) screened the 13381 article titles and/or abstracts identified by the search. The 42 full text articles identified in this process were then independently assessed for their eligibility criteria by two reviewers (NA and RR) (Figure 1).
8	Study characteristics	Study characteristics are presented in Table 1.
9	Study selection results	PRISMA guidance was used to construct a flow diagram displaying the database searching process (Figure 1). Of the 13381 records identified once duplicates were removed, the full text of 42 articles were screened, and 24 studies were included in this qualitative synthesis.
10	Rationale for appraisal	All potentially relevant studies were quality appraised by one reviewer (NA), using the Critical Appraisal Skills Program (CASP) guidelines. Studies meeting less than 5 criteria were then subject to further scrutiny, in the form of five quality appraisal prompts developed by Dixon-Woods et al. (see 'quality appraisal' section). This second stage of appraisal was carried out independently by BR, MB or JW, and decisions relating to the inclusion of these studies in the review were made following thorough communication between reviewers and referring to pre-determined quality prompts.
11	Appraisal terms	Critical Appraisal Skills Program (CASP) guidelines and quality appraisal prompts (see 'quality appraisal' section) were used to quality appraise all included studies.

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12	Appraisal process	Quality assessment was carried out primarily by one reviewer (NA), with independent verification from RR, MB or JW for ambiguous studies.	314 on 2
13	Appraisal results	CASP scores of included studies are provided in Table 1. Full study quality assessments are available for review if required.	Febru
14	Data extraction	A data extraction template (Appendix B) was created for this review by one reviewer (NA). Sections for first, second and third order constructs are included in the extraction template, which was filled manually by one reviewer (NA).	ary 2022. Do
15	Software	RefWorks reference management software.	T WC
16	Number of reviewers	Two reviewers were involved in the coding and analysis (NA, RR).	loaded
17	Coding	Two reviewers carried out line-by-line coding, grouping of codes and generation of descriptive themes (NA and RR).	from h
18	Study comparison	During primary readings of the studies, overarching concepts relating to the research aims were noted. The generation of new codes altered pre-existing codes.	ttp://bmjo
19	Derivation of themes	Initial coding was carried out in correspondence between two reviewers (NA and RR), and was grounded in the extracted data. Thematic synthesis of initial codes was an inductive approach, and involved roundtable discussion between all four authors.	pen.bmj.com
20	Quotations	Appendix C provides example literature quotations from included studies which were used to construct themes.	on Ap
21	Synthesis output	This qualitative review generated 14 descriptive themes. These are grouped into either 'Factors contributing to the protection of mental health' or 'factors influencing mental health help-seeking behaviour'. Table 2 presents a summary of themes. These descriptive themes were applied to the context of UK emergency service organisations to produce implications for practice and research.	bmjopen-2020-047814 on 2 February 2022. Downloaded from http://bmjopen.bmj.com/ on April 10, 2024 by guest. Pro
Tong 82.	A. Enhancing transp	parency in reporting the synthesis of qualitative research: ENTREQ	-

Manuscript online supplementary files

Online Supplementary File 2: CASP appraisal table

				ВМЈ (Open		bmjopen-202		I
Online Supple Online Suppl	t online sur ementary File 1 ementary File	: ENTREQ cho	raisal table	ted separately)			bmjopen-2020-047814 on 2 February 2022. Downloaded from h		
Study title (Authors, year)	Aims & Methods	Research design	Sampling	Data collection	Reflexivity	Ethical issues	Data analysis	Discussion of findings	Value
What makes an incident critical for ambulance workers? Emotional outcomes and implications for intervention. Halpern et al. 2009 ⁴²	Research aim clearly stated, introduction uses relevant literature to successfully explain demand for the research. Qualitative methods are appropriate for investigating complicated emotions, which could not be explored in equal depth via quantitative methods.	Interviews and focus groups seem appropriate methods to address the research aims, but the authors don't specify the reasons for their choice to use both methods.	4 supervisors, 54 front-line ambulance workers. Researchers state that participants were recruited from a specific cohort at a mandatory training conference, but no detail is given about what information was provided to the participants to entice them to enter the study. The authors considered representation of all job levels and both genders	The setting of the data collection away from the workplace was stated but no justification was given for the choice of study setting or methods used. Detail was given about the length of interviews and focus groups, and the main topics of questions asked during interviews and focus groups were stated. The researchers stated they had reached saturation by the end of the study. Data obtained was in the form of	Researchers do not acknowledge how their characteristics may have impacted on the results. The researchers acknowledge that self-selection or reporting bias may have contributed to the discrepancy in findings between men and women.	Ethical approval was obtained from a research ethics board, and participants signed a consent form. No further information was given regarding any ethical safeguards in place. Lack of description of how confidentiality was maintained.	The authors described how ethnographic content apalysis was used to generate thematic codes, with a constant A comparative method throughous. Three authors were involved to the coding process, although only two of these tathors listened to the audiotapes. Initial and final codes are described and contradictory data are taken into account. Sufficient data are	Findings are explicitly stated and are relevant to the researchers' aims. The only measure of credibility described was the use of three analysts during the coding process. Findings are discussed with reference to wider literature, and implications for interventions for critical incident stress are made.	The authors identify promising post-incident interventions which they believe should be further researched. Wider applicability of the study findings appear to not extend beyond the ambulance cohort. The authors provide implications for interventions for critical incident stress.

0				ВМЈ	Open		bmjopen-2020-04		
experiences of supportive and unsupportive social interactions following traumatic incidents. Evans et al. 2013 ⁵⁶ n o o o o o o o o o o o o o o o o o o	Research aims made clear in objectives section. Overall aim 'was to understand the ypes of support orocesses that might promote resilience'. Methods are appropriate as experiences, and other subjective outcomes are best measured qualitatively.	Semi-structured interview design appears reasonable to explore the proposed aims, but choice of qualitative study design not directly justified.	during recruitment. 19 Police officers. A snowballing approach was used to recruit officers, which allowed detection of information-rich participants. By limiting participants to those who have served over 2 years, the chance of traumatic incident exposure was increased. Limiting participants to those without diagnosed PTSD was appropriate as the study measured resilience-promoting investigations. Non-participation was not discussed.	audio recordings, written transcripts and written notes of non-verbal communication information as observed by the researchers. An interview schedule was used for the semi-structured interviews, although only the broad focus of the schedule was provided by the authors. Interviews were audio-recorded and transcribed verbatim. No information was given regarding interview setting, and data saturation was not discussed. No justification for choice of methods.	Researchers acknowledge how their role as researchers could have affected the data, giving social desirability bias as an example.	A National Health Service ethics committee granted ethical approval, and participants provided informed consent. No information is provided regarding efforts to maintain confidentiality.	presented osupport the findings. The authors describe how textual data was not abalysed for focus erroups. The process of thematic could be added to the final textual data was not abalysed for focus erroups. The process of thematic could be added to the final data was not abalysed for focus erroups. The process of thematic could be added to the final data was not abalysed in detail. All themes were involved in the analytic process to minimal be in the analytic process to detail the main be in the analytic process of their wor bein order to increase credibility. All 3 researched consensual an unclear issues before the final themes were	Themes are clearly summarised, with relevant quotations to support each theme. Findings are discussed in relation to the research aims. Three researchers were involved in the analytic process.	The researchers provide detailed recommendations for further quantitative research. Furthermore, the researchers recommend similar qualitative research in a population that has a history of PTSD, so that comparisons can be made.
critical incident s stress in o emergency p medical services: fi a qualitative d	Clear statement of study aims, with overall study burpose ' to Cacilitate development of interventions that	Explanations were provided for how the focus groups and semi- structured interviews were conducted. E.g	4 supervisors, 54 front-line ambulance workers. Participants were sampled to ensure all job levels and	The setting of the data collection away from the workplace was stated but not explained. Detail was given about	Researchers do not critically examine their role, potential bias and influence of research	Ethical approval was obtained from a research ethics board, and participants signed a consent form. No further	decided fon. The authors described how ethnographic content analysis was used to generate tematic codes, using a	The findings are clearly presented, using relevant participant quotations to support the authors	The research conclusions appear relevant to all EMS organisations which operate in the format of

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Halpern et al. 2008 ⁴³	take into account EMS culture.' Examining experiences adequately requires qualitative methodology.	flexible interview structure ' to permit the elaboration of more in-depth or emotionally significant data' and focus group size of 4-8 members 'to maximize interactive data'. No justification given for choice of interviews and focus groups.	genders were represented. Researchers state that participants were recruited from a specific cohort at a mandatory training conference, but no detail is given about what information was provided to the participants to entice them to enter the study. The sampling process was iterative-preliminary analysis informed subsequent sampling decisions. No further participants were recruited once saturation was reached.	the length of interviews and focus groups, and the main topics of questions asked during interviews and focus groups were stated. The researchers stated they had reached saturation by the end of the study. Data obtained was in the form of audio recordings, written transcripts and written notes of non-verbal communication information as observed by the researchers.	question formulation or data collection.	information was given regarding any ethical safeguards in place.	constant to comparative method to categorish themes. Initial and final bodes are described. The authors explain why textual day was not analysed for focus groups. Member walidation was carried on 6 months port initial data collections Contradictory data are presented and discussed, and sufficient data are presented to support the findings.	interpretations. 3 analysts were used during the data analysis process. Member validation was carried out 6 months after data was gathered. Contradictory viewpoints are taken into account and discussed.	using supervisors. The authors provide suggestions for interventions which are of relevance to EMS organisations. The authors recommend that the interventions of: 1. Supervisor support 2. Timeout period post-incident should be further researched.
Barriers and Facilitators to Seeking Mental Health Care Among First Responders: "Removing the Darkness" Jones et al, 2020 ⁶²	Aims are clearly stated and the study's importance justified. The authors aims include exploring organisational culture and perceptions of individuals, for which qualitative research is appropriate.	The decision to use individual ethnographic interviews the qualitative method of choice is well explained. The authors also explain why they chose a 'community-based approach'.	32 firefighters and/or EMTs/paramedics	Ethnographic ndividual interviews were conducted with participants by the principal investigator. An interview guide was used and attached, which was developed by the PI based on the study aim and input from a qualitative methods expert,	The principal investigator acknowledged how being married to a firefighter/parame dic promoted buy in from the community during the recruitment stage.	Ethical board approval was gained. 'Prior to starting the interview, the PI reviewed the study information sheet and completed the consent process with each participant. ' Resources for further emotional support were provided to participants in case of emotional	Content analysis and constant comparises methods were used during the analytic process. Themes which emerged during data analysis were checked with participals in later interviews. Two researchers independently analysed the transcripe and discussed the process until	Findings are presented as themes, with participant quotations included for each theme to support the author's interpretations. Credibility was enhanced by the use of more than one analyst, and member validation. Findings are discussed in relation to the	The authors make implications for practice, identifying 'need for improving education and awareness regarding duty-related MH problems.' The authors also make implications for nursing practice, and implications for future research.

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	the principal investigator. Reasons for non-participation: 'individuals not answering or returning calls (all were called twice), scheduling conflicts'		riel	distress experienced during the study.	consensus vas reached. In 80% of top level codes). No Exploration of new then its was stopped when saturation was reached. No participated quotation was reached throughout to support the author's on interpretations. The researches when it is a bias risk the tothe principal investigator conducting all the interviews. Sufficient data are presented to support the findings, and contradictory data are reported (such as positive and negative of the principal investigator conducting all the interviews of the principal investigator conducting all t	original research question.	
Exposure to human tragedy, empathy, and trauma in ambulance paramedics. Regehr et al, 2002 ⁴⁰ Aims of study are clearly stated, and their importance justified. Qualitative methods are appropriate because the authors want to explore experiences in depth. Choice qualitative methods are appropriate because the authors want to explore experiences in depth.	tative study n not citly sampling was used to ensure that participants represented a wide range of experiences in terms of length of time with the service and types of events encountered.' Non participation	A semistructured interview guide was used to conduct interview, and the authors provided examples of guide topics. These interviews were audio-recorded and transcribed, and field notes were taken. The authors acknowledge they	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection. No mention of changing the research design as the study progressed.	No mention of ethical approval, or consent gained from participants. No attempt is made to explain how confidentiality was maintained.	Nvivo was used to aid in that analysis. Spen coding was used initially to generate broad categories. Towards the later stages of the process, sheetive coding was used to develop a meaning that narrative of the experiences of the	Findings are presented in sections headed by themes. Author's comments are supported by first order interpretations. Triangulation with members of emergency service organization was carried out	The authors acknowledge that the study is 'not intended to reflect the views of all paramedics in all organizations; rather, it describes a particular phenomenon experienced and described by one group of paramedics and
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			was not discussed.	required a larger than normal sample size to achieve saturation. No information is provided for the setting of data collection. 'Other sources of data included the notes recording the interviewer's impressions.'	o Viel		workers. 80 Interviewers also recorded Geld notes. Triangulation with members of emergence service organization was carried of the research, and analysis of data was discussed. Two members of the research team developed the coding tree together. A third member reviewed the open and selective coding. It is not char how the themes were derived from the data, but sufficient plata are presented to support the findings. Contradi gory data are instuded	throughout the research, and analysis of data was discussed. Two members of the research team developed the coding tree together. A third member reviewed the open and selective coding.	points to some interesting avenues for further consideration. These include future attempts to measure cognitive and emotional empathy in paramedics and assess the impact of these strategies on posttraumatic and depressive symptoms and on social supports.'
The meaning of traumatic events as described by nurse sin ambulance service Jonsson et al. 2003 ⁴⁴	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	A phenomenologica l approach was used, and the reason for its us thoroughly explained. The use of self-reports over the use of interviews was not justified (the authors said that interviews and self-reports are	240 medical technicians and 122 registered ambulance nurses. The authors asked 500 participants of another study to write down their experiences with traumatic events. No detail is given how the sample of the	The question the participants were asked to answer was: 'Write down and describe a situation which you experienced as a traumatic event''. From the data returned by the participants, the authors selected 25% of the written	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection. No mention of changing the research design as the study progressed.	Ethical approval was granted. Consent was implied through willingness to participate in the study, but no information is given regarding a signed consent form. In addition, participants were assured that they could withdraw	in the findings and discussed. Van Kaach's scientific Sexplication was used to analyse the written stories. Detail was provided about the steps of this thematic analytic process. Only 25% 25% of the written stories were further analysed and between the written stories were further analysed.	The findings are in the form of themes, supported by first order data and the author's interpretations. The findings are related to the original research question in the discussion. There is no mention of any efforts to increase the	The authors recommend specific areas for further research, limited to the ambulance sector. The organisational interventions recommended by the authors are likewise limited to the ambulance sector.
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clearly stated, and container: a study of post-traumatic stress among ambulance personnel a 2004 ⁴⁵ about the stress among ambulance ambulance ambulance staff.* because the clearly stated, and container: a study of post-traumatic stress among ambulance ambulance ambulance ambulance and their importance of of such personnel appropriate due to nature of the aims, which is to explore subjective experiences in detail. clearly stated, and their importance was 'chosen for its potential to grasp the meaning of such personnel about not justified. Interviews was described but not justified. Interviews was of such personnel ambulance are then only its fired. Event that you have experiences in detail. clearly stated, and their importance was 'chosen for its potential to grasp the meaning of such personnel ambulance technicians. Insufficient information of such personnel about not justified. Interviews was described but not justified. Interviews was explained, and experiences.' contradily extent of explaint, and their importance was cheen of such potential to grasp the meaning of such the equation and their importance was chosen for its potential to grasp the meaning of such personnel ambulance through the described but not justified. Interviews was explained, and question were the author was faill at a collection. contradily extent of explaint, and the right to withdraw from the study at any time. The study to was approved by the Ethical committee at Goteborg University. To protect practicipant confidentiality, no quotations were participant and the right to withdraw from the study at any time. The study was approved by the Ethical committee at Goteborg University. To protect practicipant confidentiality, no quotations were participant and the right to withdraw from the study at any time. The study was approved by the Ethical committee at Goteborg University. To protect practicipant confidentiality, no quotations were participant and the right to withdraw from the study at any time. The study was approved by the Et		ВМЈ С	Open		bmjoper	
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	need for a container: a study of post-traumatic stress among ambulance personnel Jonsson et al. 2004 ⁴⁵ clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail. phenomenology was 'chosen for its potential to grasp the meaning of such phenomena through the description of lived experiences.'	nurses or ambulance technicians. Insufficient information on how participants were The only relevant information is that participants were strategically selected to obtain a 'variation of sex, age, educational background, and experience as ambulance staff.' nurses or ambulance described but not justified. Interviews were open in structure, beginning with the question "tell about a traumatic event that you have experienced". 'do you mean?" or "How did you feel about that?". The interviews, taking about an hour and a half each, were audiotaped and transcribed word by word.' Reason for choice of interview as method of data	not critically examine their role, potential bias and influence of research question formulation or data collection. we the to the tim wa the con Gö Un pr question question question question question question question general exp	ne study was scribed, the tent of about riticipation was plained, and tential risks ere explored th the riticipants, who ere assured that ey had the right withdraw from e study at any ne. The study as approved by e Ethical mmittee at is not otect participant infidentiality, no otations were ovided. The approvide about of the process latter: a cuthor famili existing philos to the using quotat is not determined to the cuthor of the c	de details theosteps e analytic sss, with the steps being ted since the r was some debate for and against the researcher's arguments. No sopile. Due authors not parficipant dentiality), it possible to ming the care string and the proported by order or standard and the possible to ming the care string and the proported by order or standard and the proported by the proported by order or standard and the proported by the p	emergency medical organisations, however caution should be taken due to the small sample size and lack of information about participant demographics. The authors recommend for the insights gained by this study to be ' distributed to all ambulance managers and other relevant personnel categories.

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				explained. Saturation of data not discussed.			without the direct participant quotation		recommendations for management.
Situation Critical: High Demand, Low Control, and Low Support in Paramedic Organizations Regehr et al. 2007 ⁴¹	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	Long interview design was chosen 'to explore in detail the experiences of paramedics in their organizations including their roles, the demands placed on them, the control over the working environment that they experience, and the supports that they receive.'	17 paramedics. Paramedics were purposively sampled from the sample of participants partaking in the quantitative component of the study. Purposive sampling was used to ensure that participants represented a wide range of experiences in terms of length of time with the services and types of work experiences encountered.	A long interview method was used to collect data. The interviews followed an interview guide (not provided), were audio recorded and transcribed verbatim. The interviewer made their own notes during the interview. Setting of data collection not provided, saturation of data not discussed.	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	No mention of ethical approval, or consent gained from participants. No attempt is made to explain how confidentiality was maintained.	Data analysis commenced with open coding that captured broad range of perspective solding facilitate the structuring of a coding framework was developed the transcriber interviews were imported at the initial coding framework was developed the transcriber interviews were imported at to N*VIVO a compute generate data analysis system, and the interview data were coded by multiple coders and subjected of detailed the matic analysis. In the final stage of analysis, constant comparate we method of data analysis was implemented to compare categories and themes across respondents. Furthermore, paramedia organisatens were constitled when creating the	Findings are presented in themed subheadings. Authors claim to have enhanced credibility through 'prolonged engagement and persistent observation'. No mention of more than one analyst, and qualitative findings were triangulated with quantitative results.	The authors make recommendations for EMS organisations, based on a mixture of their quantitative and qualitative results.

Empression deciral values of focus groups with deciral values of the study through invitations are presented. Supporting the study through invitations which is the agency's social media page, and e-mails from the EMS chaptain. Perspectives on Perspectives on Perspectives on Perspectives on Perspectives on Perspectives on Substitutions are presented and their improval was and their improval to the study through invitations are presented and their improval was sent introduction was throughough the researcher of the study in the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. EMTs were recruited for the study through invitations are relevant to EMS organisations. The study through invitations are relevant to EMS organisations. The study through invitations are the study invitations are the concentration and the provided to the transcription and the transcription and a relation of the transcription and the provided to the transcription and the provided of	00					ВМЈ	Open		bmjopen-2020-04		
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Medical Services Provider of Provider of Perspectives on Pediatric Calls: A Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail 1019** A combination of the pediatric Calls: A Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail A combination of the pediatric Calls: A Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail A combination of the pediatric Calls: A Qualitative Study Hrough Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Hrough Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Jessica et al. 2019** A combination of the pediatric Calls: A Qualitative Study Jessica et al. 2019** A combination of the study in the discussion of the study in the dimitations section. The authors are condition and principants were applied to the partici									questions and throughout the research project to guide in with feedback of Sufficient data are presented to support the findings, and contradictory data taken into		
<u>o</u>		Medical Services Provider Perspectives on Pediatric Calls: A Qualitative Study Jessica et al. 2019 ⁴⁶	clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in	groups was not explicitly	providers. ' Paramedics and EMTs were recruited for the study through invitations circulated via weekly staff emails, flyers posted at ambulance bases, the agency's social media page, and e-mails from the EMS chaplain. Interested participants were instructed to contact a single study investigator by phone or email 'Selection criteria were applied to the participants in order to sample for the most relevant participants had to be working for over a year in order to increase	focus group conduction was thoroughly described. A semi-structured guide was used by the researcher to conduct the focus groups- the same researchers conducted all the focus groups. At the end of the focus group, themes were fed back to participants, who were invited to comment. Focus groups were conducted at a large ambulance service. Audio recordings were transcribed. A second researcher was present during the focus group to take notes. Thematic saturation was	reflect on the potential biases of the study in the limitations section. They acknowledge that by using discussion prompts, they may have steered the conversation away from topics that the participants would otherwise have talked about. Furthermore, they acknowledge that the fact that a single coder was responsible for coding 80% of the data alone may be a source	informed consent and ethical approval was gained from an ethics committee. Resources were provided to the participants in case of experiencing psychological	Transcripts were analysed sing directed ontent analysis. Two reviewers independently coded 20% of the transcripts and a single researcher coded the remaining data. Findings were validated brough groups consensus. Quotations are provided for all sub-themes. Authors on acknowledge the limitations of focus groups, and the potential for bias with one researched data. The authors also acknowledge how the discussion guide prompts may have altered the topic of discussion good	presented as sub- themes, with quotations supporting each sub-theme in a separate table. Credibility of findings was enhanced by reviewing the focus group themes with participants at the end of the focus group. Furthermore, some of the data was reviewed by	relevant to EMS organisations, specifically EMS leaders. Although Desired support mechanisms following difficult paediatric calls can be extrapolated to other types of

Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	Focus groups were chosen as the method of data collection in order to 'allow the researcher to gain insight into participants' beliefs about and perceptions or accounts of a particular topic'. The researchers state: The focus groups allowed the researcher to interact systematically and	traumatic incident exposure. Non participation was not discussed. 40 police officials. Participants were recruited via a purposive sampling method through the health and wellbeing departments, which were used as an intermediary between the researchers and participants. Police officials were purposefully chosen	Setting for data collection was not outlined. Three focus groups were carried out, and semi-structured interviews were performed within the focus groups. Exact questions asked are provided by the researchers. The sessions were audio recorded, transcribed and analysed. Saturation of the	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	Ethical approval was gained for this study from the North-West University's ethical committee . Informed consent was taken by the researchers. ' Participants were furthermore encouraged to withdraw from the focus groups at any time	talked about. Contradictory data are taken into account. The authors describe \$\frac{1}{2} 8\$ step method of thematic analysis, but do not explain how they will apply this method. To so not clear how the data is used to arrive at the thematic are generated survive at the thematic are presented to arrive at the thematic are presented to support the findings. \$\frac{1}{2}\$	Findings are presented as subthemes, supported by sufficient quotations. There is limited discussion for and against the researchers' arguments. No efforts are made to enhance credibility of findings.	The authors give a variety of 'preliminary indicators' for which a 'purposeful psycho-social trauma intervention programme' is indicated. The generalisability this is limited to police forces.
clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in	were chosen as the method of data collection in order to 'allow the researcher to gain insight into participants' beliefs about and perceptions or accounts of a particular topic'. The researchers state: The focus groups allowed the researcher to interact systematically	officials. Participants were recruited via a purposive sampling method through the health and wellbeing departments, which were used as an intermediary between the researchers and participants. Police officials were purposefully chosen	collection was not outlined. Three focus groups were carried out, and semi-structured interviews were performed within the focus groups. Exact questions asked are provided by the researchers. The sessions were audio recorded, transcribed and analysed.	not critically examine their role, potential bias and influence of research question formulation or	was gained for this study from the North-West University's ethical committee . Informed consent was taken by the researchers. ' Participants were furthermore encouraged to withdraw from the focus groups at any time	describe & 8 step method of thematic malysis, but do not explain how they will apply this method. It is not clear how the data is used to rive at the them generated Sufficient data are presented support the findings.	presented as sub- themes, supported by sufficient quotations. There is limited discussion for and against the researchers' arguments. No efforts are made to enhance credibility of	a variety of 'preliminary indicators' for which a 'purposeful psycho-social trauma intervention programme' is indicated. The generalisability this is limited to
	simultaneously with several individuals.	considering the relevance of the topic, specifically referring to their exposure to trauma, resultant symptoms of PTS and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that non-participation would not be sanctioned.	data is not discussed.	Viev	should they feel uncomfortable or experience any harm or emotional consequence as a result of participating in the study.'	Contraditiony data are into account. into account. com/ on April 10, 2024 by guest.		
Aims of study are clearly stated, and their importance justified. Qualitative methodology is	One-to-one interviews were chosen but reasons for their use over focus groups were not	Station Officers, 8 Station Officers, 4 Sub Officers, 4 Leading Firefighters, 2 Fire Control	interviews were conducted in a private room with participants. They lasted or up to 90	Researchers do not critically examine their role, potential bias and influence of research	No mention of informed consent, ethical approval or methods to ensure confidentiality.	were recorded and fully transcribed and the data were	Findings are presented as sub- headings of themes, with participant quotations	The authors provide recommendation for fire organisations.
tl j	heir importance ustified. Qualitative	learly stated, and heir importance ustified. reasons for their use over focus	symptoms of PTS and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that non-participation would not be sanctioned. Aims of study are learly stated, and heir importance ustified. Qualitative use over focus symptoms of PTS and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that non-participation would not be sanctioned.	trauma, resultant symptoms of PTS and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that non-participation would not be sanctioned. Aims of study are learly stated, and heir importance chosen but reasons for their use over focus It rauma, resultant symptoms of PTS and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that non-participation would not be sanctioned. 11 Firefighters, 8 'One-to-one interviews were conducted in a private room with Firefighters, 2 participants. They	trauma, resultant symptoms of PTS and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that non-participation would not be sanctioned. Aims of study are learly stated, and heir importance ustified. Pualitative very firefighters, 2 very firefighters, and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that non-participation would not be sanctioned. 11 Firefighters, 8 very firefighters, 4 Sub Officers, 4 Leading private room with participants. They bias and influence	trauma, resultant symptoms of PTS and their participation in trauma intervention programmes. Non-participation was not discussed, other than reassuring participants that non-participation would not be sanctioned. Aims of study are learly stated, and heir importance custified. Pualitative use over focus Trauma, resultant symptoms of PTS and their participation the study.' The study of the study.' The s	Aims of study are learly stated, and heir importance ustified. One-to-one interviews were custified. One-to-one interviews were conducted in a private room with qualitative use over focus Station Officers, 4 Conducted in a private room with qualitative use over focus One-to-one interviews were conducted in a private room with participants. They bias and influence interviews were not critically informed consent, ethical approval or methods to transcribed and the data were	Aims of study are learly stated, and interviews were learly stated, and interviews were chosen but sustified. The interviews were learly stated, and interviews were chosen but sustified. The interviews were presented as subheadings of their reasons for their leading private room with private room with leading leading leading private room with leading l

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Haslam et al. 2003 ⁶⁰ appropriate due nature of the aims, which is to explore subjective experiences in detail.	interview schedule was developed in conjunction with psychologists working within the fire service, as well using relevant literature.	Officers and 2 Area Divisional Officers. No information provided on how participants were recruited. 'The sample was selected to cover the range of positions in the service and the proportion of respondents in each position broadly reflects the profile of the service.'	minutes. The interview questions were stated by the researchers. Open-ended questions would be used to explore participants' feelings towards incidents. ;The interviews were recorded and fully transcribed and the data were analysed by sorting verbatim material into emergent themes as described by Dey (1993)." Choice of data collection methods or study setting was not justified. Saturation of data was not discussed.	question formulation or data collection. The researchers acknowledge that their small sample size may not be representative.	1	sorting verbatim material into emergentohemes as described by Dey (1994). A second regarcher independently checked the analysis to censure the tensure to show how the tensure to show the tensure to t	supporting the authors' comments. Credibility is enhanced by the use of two analysts.	recommendations are concerned with efforts to improve staff wellbeing.
A qualitative study about experiences and emotions of emergency medical technicians and out-of-hospital emergency nurses after performing cardiopulmonary resuscitation resulting in death Fernández-Aedo et al. 2017 ⁴⁷ Aims of study ar clearly stated, an their importance justified. Qualitative methodology is appropriate due nature of the aims, which is to explore subjective experiences in detail.	and focus groups were used as methods of data collection, the reason for their use was not explained.	7 EMTs and 6 nurses. Snowball sampling was used to recruit the participants. As a prerequisite for their inclusion in this study, the health workers were required to have carried out at least 5 CPR techniques resulting in death over their entire professional career. No volunteer staff	Questions asked during the interviews were 'developed based on the reviewed literature and experts' opinions', but the authors do not provide a topic guide or examples of other prompts. 'The assignment of participants to' either individual semi-structured interviews or focus groups 'was	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	'The study was approved by the Ethics Committee of the University of the Basque Country.' 'echnique was based on their availability and preferences. Participants gave their written consent to participate in the study and to be recorded in audio and/or video format.'	A detaile description of the analytical process is provided. To ensure the quality of the No interpretation and guaranted the reliability of the information obtained. It is triangulation between the interview was also carried out. Any disagreement	Themes are not provided with any participant quotations. To ensure the quality of the interpretation and guarantee the reliability of the information obtained, a triangulation between all researchers involved in the interviews was also carried out. Any disagreement	The authors recommend greater training for health professionals when 'notifying bad news and providing psychological support to the family members of the deceased 'No recommendation for research are made.

		was included in the study. 'In order to ensure heterogeneity, the study included healthcare professionals of different ages, both genders and varying years of experience, working at different institutions.' Non participation was not discussed.	based on their availability and preferences.' 'A total of 3 health emergency technicians and 3 nurses were interviewed individually for a total of 1135 min by two of the researchers involved in the study. The focus group was comprised by 4 EMTs and 3 nurses, and it was used to triangulate the information obtained during the individual interviews. The group session lasted 76 min and was carried out by two researchers, one acting as a moderator and the other as an observer.' Data saturation was reached.	Viel	レのカ	was resolved by consensus No participage quotations are provided to support the support the authors' interpretations. Contradictory data re necessary. Downloaded from http://bmjopen.bmj.com/ on April 10,	was resolved by consensus.' Other than the use of multiple researchers in the analytic process, no other methods to increase credibility are discussed.	
Experiences of and actions towards worries among ambulance nurses in their professional life: A critical incident study Svensson et al. 2008 ⁴⁸ A ims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	There is no justification for the choice of semi-structured interviews as a method of data collection.	25 ambulance nurses. Participants were strategically selected from three ambulance services based on 'socio- demographic and professional characteristics such as age,	The authors explain the structure of the interviews, giving examples of the open-ended questions which they ask to participants at the start of the interview. The authors say the	'As both the researchers and the nurses were familiar with the environment in which the study was conducted, the risk of misunderstanding during the interviews was minimised.'	'The managers of the ambulance service involved gave approval for the study to be conducted in their department.' The authors say ethical board approval is not required in Sweden under	The interviews were also cad through several times before categorizing them into sub-incategories in order to forther improve accurity. The incidents were analysed according to	Findings are arranged into themes and subthemes, and participant quotations are included for each theme to support the authors' conclusions. Credibility was enhanced via the	The authors recommend further research: 'This phenomenon should be studied more in-depth in order to map how the interaction with colleagues influences the worry among
						were analysed according to Opyright.		

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	education level, sex and years in the profession'. Non participation is not discussed. Non participation is best suited the participants, and three interviews were conducted over the phone. Researchers explain their use of interviews: 'Interviews were chosen as the data collection method, which allowed the respondents to describe their thoughts in more detail with the help of follow-up questions.' The authors also justify the use of the CIT method. Interviews were audio recorded and transcribed verbatim. Saturation of data was not discussed.		certain circumstances. The authors describe how informed consent was taken from participants, including assurances that data will be treated confidentially. 'The study adhered to the principles outlined in the Declaration of Helsinki'	character and content. This step was repeated several times before the rend result embedd. The categories was condected in cooperation with the second research with the research with the research with the risk of rosubjective (Andersson and Nilsson, 1964). Direct quotes from the minimised the interview strengthened the accuracy of the study. Contradictory data were daken into account, and sufficient represented to support the findings. Contradictory data were daken into account, and sufficient represented to support the findings. Saturation of data was not 20 discussed.	use of two researchers when categorising incidents. Authors consider contradictory data in the discussion.	ambulance nurses.' Some recommendations are also made for employers of nurses.
nature of resilience in paramedic practice: A psycho-social study Clompus et al. 2016 ⁴⁹ clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective clearly stated, and free association narrative interviewing, a technique which involves a preliminary narrative interview, followed by a	'An advert, with a brief study outline, was placed in a regional paramedic bulletin which was circulated electronically to staff with an invitation to The researchers justify their use of using Free association narrative interviewing. Saturation was achieved after the 6th interview. Details of the exact two stages	Researchers do not critically examine their role, potential bias and influence of research question formulation or data collection.	' Ethical approval was received from a (NHS) research ethics committee and a university in the SW of England. Confidentiality and anonymity was secured through the use of	Details of the FANI analytic process were given by the researchers. 'Any discrepance's were examined and discussed until consensus was reacted. Trustworthiness	Themes are presented as sub-headings, and supported by the direct participant quotations. Member validation was carried out to improve credibility.	The authors relate the findings of the research to the theories of exiting organisational interventions, eg TRiM. The authors conclude that for front-line paramedics, ' applying
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experiences in detail. Airs of study are experiences or experiences and state of the authors do not explore all fast are regregory core-experiences of described by the authors do not explore all fast are experiences of the arms, which is to explore solidely is apportated to the arms, which is to explore solidely is apportated to the arms, which is to explore solidely is apportated to the arms, which is to explore solidely is apportated to the arms, which is to explore solidely is apportated to the arms, which is to explore solidely and interviews. The group is are explored to the arms, which is to explore solidely and interviews. The group interviews were and the arms of the arms, which is to explore solidely and interviews. The group interviews were and the arms of the arms, which is to explore solidely and interviews. The group interviews were and the arms of the arms, which is to explore solide to the arms, which is to the arms of faunce of the arms, and arms of faunce to the following the arms of							2		
First response emergency care – clearly stated, and study are experiences described by firefighters Abelsson et al. 2019 ⁶¹ Described interviews, and considered aims, which is to explore subjective experiences in detail. Aims of study are clearly stated, and their importance interviews, and support and discussed. Authors don't explain how care explain how participants were recruited into the study. Authors don't explain how care explain how participants were recruited into the study. Abuthors don't explain how care interviews was interviews was not critically examine their role, potential bias and influence of research on the group interviews was nature of the aims, which is to explore subjective experiences in detail. Authors don't explain how participants were interviews was interviews was on group interviews was experiences in detail. Authors don't explain how participants were care interviews was interviews was interviews was on group interviews was and discussed. Participation not critically examine their role, potential bias and influence of research on ot critically examine their and ethics committee, which is an accordance with Swedish law. Consent was implied through participation in the study, following the delivery of verbal interviews and discussed in repeated readings of the transcribed interviews and discussed in reaso of future research experiences in detail.		enabled a deeper analysis of the affective and often unconscious aspects of	Participants had to fulfill the following criteria: -Grade of paramedic, technician or emergency care practitioner -Willing to volunteer their time Three out of the 10 individuals became unavailable, but the authors do not	interviewing process were provided by the authors. interviews were audio recorded and transcribed, and carried out at a place of the participants' choosing.	Viel	participants, and all data were kept in a password protected personal computer with access limited to SC. Participants were made aware that they could withdraw at any time and that the anonymised data would be disseminated in various ways. Due to the	credibility were established by several means including participates feeding into the study's air several means including feeding into the study's air several means of the		would seem to be a pressing
researcher. was provided by the researchers. derived, and strands of	emergency care – experiences described by firefighters Abelsson et al. 2019 ⁶¹ clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in	justify their choice of group interviews, and why limits are set on group interviews: 'The group sizes of eight and nine participants were considered acceptable to moderate and managed by the	explain how participants were recruited into the	Setting for group interviews was not given. Participation numbers in the group interviews were provided and discussed. Justification for methods chosen was provided. A rough structure to the interviews	not critically examine their role, potential bias and influence of research question formulation or	been sought from an ethics committee, which is in accordance with Swedish law. Consent was implied through participation in the study, following the delivery of verbal 'clear information' by	into accopat and discussed. The authors describe ffeir method object-driven, 2 interpretive qualitative content analysis. This involved repeated readings of the transcribed interviews and then iden fication	presented as four themes, with consistent use of primary quotations to support the researchers' arguments. The findings are discussed in relation to the	contrast their findings with other research in the field, such as in the case of spouses being used as sources o support by firefighters. They also recommend areas of future research, eg involving other

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		Interaction in the pre-existing group is key to a successful group interview. In this study, all firefighters worked at the same fire station, which promoted interactions optimal for the research purpose'		giving questions which were asked to participants. There is no mention of saturation of the data. The authors reflected in the 'limitations' section that group interviews could lead to participants being uncomfortable.	Vio.	Methods taken to protect confidentiality are described.	formed into subcategories and categories and categories and categories and categories are present to support the findings. Contradictory data are discussed by the subcategory data are presented by the subcategory data are discussed by the subcategory data are		emergency service workers.
Paramedics' experiences with death notification: a qualitative study Douglas et al. 2013 ⁵⁰	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors used focus groups as their method of data collection, but did not justify their use over other qualitative methods.	28 paramedics. Participants were self-selected. Recruitment messages were delivered via 'departmental e-mail, flyers, and by word-of-mouth'. Authors don't explain why the participants selected were the most appropriate for the study, and non-participation is not discussed.	The authors provide the locations of the focus groups, and give examples of questions asked during the sessions. There is no explicit justification for why focus groups were chosen over other qualitative methods. Methods were modified during the study as follows: 'The question guide was adapted as	The researchers acknowledged that their choice of focus group location, as well as the presence of the supervisor in the focus group may have affected the answers given by participants. The researchers do not critically examine their own role.	Ethical board approval was gained, and written consent obtained. No information is provided on efforts to maintain participant confidentiality.	The authors describe an inductive approach to data analysis. Show researchers were involved in the analysis because. Themes were discussed with a further two authors, the consensus was reached. Credibility was enhanced in the use of member checking the participant responses with	The findings are presented as themes, supported by participant quotations and authors' interpretations. Credibility was enhanced by distributing results from the study to participants for the purpose of generating feedback.	The findings are discussed in relation to existing literatur and the authors make recommendation for practice, specifically regarding paramedic training.

Peer-support: a coping strategy for muses working at the Emergency Ambulance Service Carvello et al. 2019¹¹ a. 2019¹ a. 2019
ambulance service "118" in a hospital in northern Italy, who had experience in the extra-hospital emergency. Non-participation is not discussed. That they would feel at ease. Semi-structured interviews are extra-hospital emergency. Non-participation is not discussed. That they would feel at ease. Semi-structured interviews are carried out with participants. The authors explain how they chose their questions, by taking inspiration from similar literature, but choice of That they would feel at ease. Semi-structured interviews are extracted by the novice and professional relationships therapist. No mention is made of efforts to discuss the software 12. 'credibility of findings. That they would feel at ease. Semi-structured interviews are extracted by the novice and professional relationships therapist. No mention is made of efforts to discuss the software 12. 'credibility of findings. That they would feel at ease. Semi-structured interviews are extracted by the novice and professional relationships therapist. No mention is made of efforts to discuss the software 12. 'credibility of findings. That they would feel at ease. Semi-structured interviews are extracted by the novice and professional relationships therapist. No mention is made of efforts to discuss the software 12. 'credibility of findings. That they would feel at ease. Semi-structured interviews are extracted by the novice and professional relationships therapist. No mention is mention is made of efforts to discuss the software 12. 'credibility of findings. The professional relationships therapist. No mention is mention is made of efforts to discuss the software 12. 'credibility of findings. The professional relationships therapist. No mention is made of efforts to discuss the software 12. 'credibility of findings. The professional relationships therapist. No mention is made of efforts to discuss the software 12. 'credibility of findings. The professional relationships the professional relationships the professional relationships the profession

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a dual dispatch programme in Sweden: an interview study Hasselquist-Ax et al. 2019e3 a large subjective experiences in detail. **The authors list the researcher's recruitment approaches were used: 1) an invitation letter from the researcher was presented to the main collaboration group for OHCA alarms in Stockholm County; 2) on the police report for cardiac arrest alarms there was a request to contact the researchers for a voluntary interview; 3) fire stations were directly contacted for recruitment of participants.* Non-participants.* Non-participation of methods during study without experiences in detail. **a dual dispatch programme in Sweden: a miner view, semi-structured interviews; all but there took place at regular work places (not know of places). Setting for interviews; all but there took place at regular work places (not know of places). Setting for interviews; all but there took place at regular work, where the others took place). Critical interview was collection. The authors site the researchers' the treatment strangths and past experiences, demonstrating reflexivity. Critical interview. Setting for interviews; all but there took place at regular work, where the others took place). Critical interview is the researchers' the treatment strangths and past experiences. Participants are explain departs at represent the others took place). Critical interview is the researchers' the study without any reprisal. Participants are explain for GICT was chosen at the method for data collection. The authors steed to financial reduction of the took place). Critical interview is the researchers' the tree researchers' the tree took place to repress at regular work, places (not not not entitled to financial reduction of the took place). Critical interview is the researchers' the tree took place at regular work, places (not not not not not not not not not not	themes. Although participant quotations were provided, the authors didn't provide quotations for all of their comments. Often, the views of participants were summarised without providing participant quotes.	The authors provide recommendations for swedish emergency organizations, such as giving indications for training of paramedics and firefighters.

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Exploring paramedic communication and emotional expression in the workplace after responding to emergency calls Drewitz-Chesney et al. 2019 ⁵³	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors don't explain why semi-structured interviews were chosen over other qualitative methods.	8 paramedics. The recruitment strategy is explained in detail. Participants were recruited over facebook groups. 'Participants were sampled using convenience, then purposive sampling. Convenience sampling enabled initial recruitment. Snowball and quota sampling were the two forms of purposive sampling used.' Authors are not clear on which attributes are sampled for. The authors justified their choice of participants by saying that 'when sufficient information is gleaned from participants, a smaller sample size is required '	Semi-structured interviews were performed with participants, but the researchers do not justify why interviews are chosen. Interviews were conducted using Skype, and participants could choose to interview via video or audio only. An interview guide is provided. Interviews were audio recorded and transcribed, and data collection was stopped once saturation was reached.	The recruitment messages mention that the researcher previously worked as a paramedic. The researchers acknowledge the possibility of confusion and bias that can arise from this, although this was minimised by the fact that the researcher didn't work with any of the participants.	'This study received ethical approval from the University of Edinburgh's Usher Research Ethics Group. Each participant provided verbal and written consent. To minimise the risk of psychological impact, participants were never asked to recall specific calls or details. Participants were monitored for signs of distress during each interview (none were noted). BCEHS paramedics have access to three services offering support and counselling. These services were listed on their information letters. At the conclusion of each interview, participants were asked if they wanted a referral to any of the services, which	presented to support the findings, and contradictory data are taken into account. The authors used constructivist grounded theory in their applytic process. The authors are transpared about how them is are generated from the data. On Credibility was enhanced frough triangulation, including interviewing the manager of the BCEHS of Sprogram, Marsha McCall, and Anonymous, a retired BEHS paramedic whom substantiated some participant data. The k descriptions and a diverse sample contributed to credibility and transferability. An audit trail was maintained throughout the research process which enganced dependability. Journaling and bracketing enriched of reflexivity is tach transcripty was read at	Quotations are interspersed among the results which are presented as themes. Credibility was enhanced through the use of triangulation with leading members of the organisation.	The researchers consider their findings in relation to existing literature. They also make various recommendations for emergency service organisations, relating to post-incident organisational interventions that could protect paramedic wellbeing.

Mental Health in the UK Palice Conductive of Clearly stated, and the William program of the UK Palice Distilled Interviews to a propriate due to a possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in the study. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and the UK Palice of possible experience in detail. Alins of study are clearly stated, and the UK Palice possible experience in detail. Alins of study are clearly stated, and possible experience in detail. Alins of study are clearly stated, and possible experience in detail. Alins of study are clearly stated, and possible experience in detail. Alins of study are clearly stated, and possible experience in detail. Alins of study are clearly stated, and possible experience in detail. Alins of study are clearly stated, and possible experience in detail of the control of experience in detail. Alins of study are clearly stated, and provide details. Alins of study are clearly stated, and possible experience in detail of the control of the study. Alins of critical possible experience in details of the control of experience in details of the control of experience in details of the control of experience in details of the study within the choice of experience in details of the control of the cauthors of the cauthors of the cauthors of the cauthors o								<u>0</u>		
Times: The Impact of Critical Impact of Critical Incidents on Frontline Cultative Chose individual Component of this Frontline Cultative Chose individual Component of this Study followed a component of the component of th	the UK Police Force: a Qualitative Investigation into the Stigma with Mental Illness Edwards et al. 2020 ⁵⁸	clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	justify their use of open-ended questions in semi-structured interviews to facilitate meaningful discussion, although the choice of interviews other qualitative data collection methods is not justified.	officers. 'Participants were recruited through a referral from a charity, personal network, police forum and contact from within the police force.' The authors outline the criteria for participant inclusion in the study. They do not however justify their choice for these criteria. Non-participation was not discussed.	individual interviews were conducted using a topic guide, of which the authors provide details. The authors justify their use of open-ended questions. Interviews were audio recorded and transcribed. Data saturation was not discussed.	not critically examine their role, potential bias and influence of research question formulation or data collection.	Ethical board approval was obtained, as well as written consent from the participants. The researchers also had measures in place to support participants who experience distress due to participation in the study.	least threedimes to improve accuracy and familiarity. Sufficient lata are presented osupport the findings, and contradictory data are taken to account. 20 The authors used Braun and Clark's approach of the matic analysis. They out the detail, giving extenples of how they arrived at themse from the tata. It is unclease from the tata.	presented as themes and sub- themes. The authors include contradictory data, and discuss this. Discussion takes place throughout the study within the results section, but there is also a separate discussion section.	identify areas where further research would be valuable, such as barriers to help-seeking in male dominated professions. Recommendation s are also made to police organisations, such as highlighting a need to increase mental health awareness.
Personnel: A appropriate due to however justify Qualitative nature of the their use of some Personnel their use of some Perspective nature of the aims, which is to closed questions (the earlier study their use of some Perspective nature of the their use of some Personnel their use of some Personnel to the Personnel to the Personnel to their use of some Personnel to the Personnel to	Times: The Impact of Critical Incidents on Frontline Ambulance Personnel: A Qualitative	clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the	justify why they chose individual interviews over other qualitative methods. They do however justify their use of some	EMCs. The qualitative component of this study followed a quantitative Survey. Participants from	collection is not stated. The authors give examples of the topics discussed during the interview process.	not critically examine their role, potential bias and influence of research question formulation or	informed consent, ethical approval or methods to	was under aken. 'A random sample of transcribts was read and boded by both authors incorder in ensure Good	presented as themes. For each theme, a range of relevant quotations are provided to support this	recommendations to police organisations for post critical incident support

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Gallaghe 2007 ⁵⁴	er et al.	explore subjective experiences in detail.	to elicit background information and to facilitate comparisons across participants.)	were asked if they would be willing to participate in qualitative interviews. Non-participation is not discussed.	schedule used was created with the help of a literature review and the findings from the quantitative component of the study. No justification for the choice interview method is given. The interviews were audio recorded and transcribed.			validity. We is not clear how the themes were derived from the data. The puthors don't critically evaluate their own role of the analytic process. Contradicory data are the into account- for example when giving examples of particion with conflicting attitudes. The researches don't critically examine their own ole. Sufficient data are presented to support the findings. o	of findings is not discussed.	
Police of mental (health as spoiled in Bullock 2018 ⁵⁹	ill-) nd identity	Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	Researchers justified their use of telephone interviews: '. While telephone interviews are often depicted as a less attractive alternative to face-to-face interviewing, telephones may allow respondents to feel relaxed, more able to disclose sensitive information and there is little evidence that they produce lower quality data '	52 police officers, two police staff, four Police Community Support Officers (PCSOs) (four) and one special constable. Participants were recruited from six police constabularies in England and Wales. 'Individual participants were identified by virtue of their contribution to an online survey on the nature of work-related injury in which	The researchers explain in detail how the telephone interviews were conducted. Open questions were asked by the participants. Saturation of data is not discussed. 'All interviews were digitally recorded, professionally transcribed and anonymized. '	The researchers acknowledge that the nature of the interview is sensitive, and that the nature of telephone interviews would make participants more comfortable disclosing such information.	'The nature of the interviewing was inevitably sensitive and mechanisms were put in place to mitigate that; for example, interviewees were provided with the contact details of sources of support.' There is no mention of ethical board approval, informed or methods to protect patient confidentiality.	The authors use Braun and Clark's thematic analysis approach and give a very brief overview of the approach but they do not give examples of how themes were derived from the data. The versearches didn't critically examine their own fole. Sufficient data are presented to support the findings, and contradic ary data are taken are opyright.	The findings are presented as themes. For each theme, the authors use participant quotations as well as relevant literature to discuss the context surrounding the quotations. No efforts to enhance credibility are discussed.	The authors make recommendations to police organisations based on their findings surrounding stigma. No recommendations for research are made.

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'You see a baby die and you're not fine:' a case study of stress and coping strategies in volunteer emergency medical technicians Folwell et al. 2018 ⁵⁵ Aims of study are clearly stated, and their importance justified. Qualitative methodology is appropriate due to nature of the aims, which is to explore subjective experiences in detail.	The authors justify their choice of in-depth interviewing technique as they 'hope to gain a deeper understanding of the lived experiences of voluntary EMTs'.	they identified themselves as willing to participate in a full-length interview'. This study is part of a wider project. Non-participation was not discussed. 25 EMTs. Participants were recruited from one county in a Western state. It is not clear how the participants were selected, and non-participation is not discussed.	Interviews were conducted in a private space of the participant's fire department. Justification for choice of interview setting was not provided. In-depth interviews were performed with participants, using an interview guide. This was chosen to "gain a deeper understanding of the lived experiences of voluntary EMTs". Saturation was reached by the end of the study. Interviews were audio recorded and transcribed.	'The research team consisted of a female Caucasian professor who holds a doctorate and a male Caucasian undergraduate student with three years' experience as a volunteer EMT. While some of the interviews were conducted by both members of the research team, most interviews were conducted by the volunteer EMT'. Other than providing these details, Researchers do not critically examine their role, potential bias and influence of research	Confidentiality was guaranteed by the authors as the transcripts were anonymised. There is no mention of ethical board approval or informed consent.	saturations not discussed on 2 February 2022. The authors are constant constant analysis. The authors analysis of constant the transcripts and collaborated to discuss findings. The authors are very transparent about the analytic process. Contradictory data were discussed such as in the example of participants discussionathe pros and conso of CISD. Sufficient data are posterior to support the findings. by guess	Findings are presented as themes and subthemes. 'To enhance credibility, member validation was performed in which a summary of findings and initial interpretations of data were given to five participants to confirm the researchers accurately depicted viewpoints and experiences. To enrich transferability, we provided detailed descriptions of participants and research sites. To improve dependability, we dependability, we dependability we dependability we dependability.	The authors make four detailed recommendations to the specific EMS organisation with which the study was involved. The authors also make recommendations for future research.
			audio recorded	not critically examine their role, potential		to support	descriptions of participants and research	
						opyright.		

Appendix A- Abbreviations and definitions

Abbreviation	Meaning
NHS	National Health Service
PTSD	Post-Traumatic Stress Disorder
ESW	Emergency Service Worker
ESO	Emergency Service Organisation
EMS	Emergency Medical Service
CISD	Critical Incident Stress Debriefing
UK	United Kingdom
TRiM	Trauma Risk Management
GMB Union	General, Municipal, Boilermakers and
	Allied Trade Union
RTA	Reciprocal Translocation Analysis
CASP	Critical Appraisal Skills Programme
EMT	Emergency Medical Technician

Term	Definition
Psychologi	'the unique discomforting, emotional state experienced by an individual in response
cal distress	to a specific stressor or demand that results in harm, either temporary or permanent,
	to the person'41
Critical	'any event with sufficient impact to produce significant emotional reactions in people
incident	now or later'. 9
Supervisor	EMS frontline personnel responsible for overseeing a 'crew' of EMTs/paramedics. Brown University- Roles And Responsibilities Of Supervisory Staff. [internet] 2021[cited 2021 June 1]. Available from: https://www.brown.edu/campus-life/health/ems/roles-and-responsibilities-supervisory-staff#:~:text=EMS%20Supervisors&text=The%20EMS%20Supervisor%20is%20the,and%20appropriate%20emerge ncy%20vehicle%20operation.
Mental	A member of an organisation raising mental health awareness within the workplace ⁹⁹
health	
champion	

Type of stigma	Definition
Anticipated stigma (Perceived stigma)	'the extent to which people believe they personally will be viewed or treated in a stigmatizing way if their mental health problem or related help-seeking becomes known' 77
Treatment stigma	'the stigma associated with seeking or receiving treatment for mental ill health'76
Internalized stigma	'holding stigmatizing views about oneself' ⁷⁶
Public stigma	'invalidating and unjustified beliefs (i.e., prejudices and endorsed stereotypes) about others' ⁸³

Appendix B: Literature search terms

(((mental AND (health OR well?being)) OR (trauma* OR *stress OR recover* OR PTSD OR post?traumatic?stress OR emotion* OR (critical AND incident) OR (traumatic AND incident) OR (traumatic AND event) OR experience* OR support* OR *support) AND (emergency service* OR emergency medical service* OR EMS OR first responder* OR ambulanc* OR paramedic* OR firefighter* OR fire service* fire department* OR police*) AND (qual* OR mixed?method* OR interview* OR focus?group*) NOT (quality OR emergency?department)

((emergency service* OR emergency medical service* OR EMS OR first responder* OR ambulane* OR paramedic* OR firefighter* OR fire service* fire department* OR police*) AND (qual* OR mixed?method* OR interview* OR focus?group*) NOT (quality OR emergency?department)) AND ((help-seeking* OR stigma* OR mental* OR barriers OR (MeSH terms: help-seeking behaviour, social stigma, mental health, psychiatry, social support, mental disorders))

Appendix C: Data extraction template

Citation

Reviewer

Country

Aims

Ethics – how ethical issues were addressed Study setting- e.g. type of organisation

Relevant context to study setting

Socio-demographics of the country / region

Recruitment context (e.g. where people were recruited from)

Sampling- what sampling methods, what were inclusion and exclusion criteria,

Data quality rating

Participants- 'population described'

Participants- 'characteristics'- age, sex etc

Theoretical background

Proportion of sample exposed to critical incidents/ definition of critical incident/ anything relevant to the study matching my selection criteria

Definition of critical incidents/ something related

Data collection methods- data collection methods, role of researcher within setting...

Data analysis approach- how many researchers, how did they code, how were findings corroborated,

Themes identified in study (1st order interpretations)- Help-seeking

Themes identified in study (1st order interpretations) – Mental Health recovery

Data extracts related to key themes- Help-seeking

Data extracts related to key themes- Mental health recovery

Author explanation/interpretation of key themes (2nd order interpretations)- Helpseeking

Author explanation/interpretation of key themes (2nd order interpretations)- Mental health recovery

Recommendations made by authors (both outcomes; but specify)

Third order interpretations:

Other potentially relevant information

Appendix D: Example literature quotations used to construct themes

Facto	Organ	Time	They prefer support to be offered immediately after the call and find that
rs contri buting to menta	isatio nal	out/Downt ime	downtime after a stressful call allows them to decompress and prepare for the rest of their shift: 'we knew we weren't going to get a call right, so we knew we had the two hours, so we watched a funny show and had a napButlike for me personallythat's exactlywhat I needed.' Participant 4 from focus group 4. Douglas et al. 2013
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health recove ry post traum atic incide nt expos ure			our supervisor took us out of service for a couple of hours and let us go have lunch, sat down and had lunch and just kind of relax and talk amongst ourselves, not even about the call, just about whatever, just to kind of relax. Before we went back on shift. Certainly we could have booked off the rest of the day, you know, on stress leave or whatever, but we all, found that just having, just being able to have a couple of hours to, kind of, you know, relax a little bit, that helps us a lot.' (Focus group #520–522) Halpern et al. 2008
ure			I like didn't want to be like I need to take a couple of hours off because I did not want to look bad in front of the supervisorParticipant 2 from focus group 2. Douglas et al. 2013
			Unfortunately, paramedics often do not have adequate time to talk. Several participants expressed their frustration over 'calls waiting'. These calls are waiting to be dispatched as no crew is available. When BCEHS paramedics offload their patient(s) at the hospital, dispatch can immediately send them to a waiting call. This can limit paramedics' ability to discuss CIs. James desired:
			to be given the time uninterrupted, unbothered Give us our time to decompress. Drewitz-Chesney et al. 2019
		Superviso r	Depending on who it is one supervisor, we took, we did a [critical call], and we took the last hour of the shift off. And he was making us fill out all these forms and, you know, telling us that if we wanted to take the next shift off that we had to go see our doctor and get a note for this and that. And you know, just made it more stress-(Focus group #520–522) Halpern et al. 2008 'And so our supervisor was really, we have a great supervisor and he's, you know, asked us all specifically, "are you guys okay", you know. And the other crew went off on stress for the rest of the shift. We stayed, because we said, y ou know, we're okay. We just kind of dealt with the aftermath of everything. It was still a pretty stressful call but at least we had that option. And he had no problems, like, he said, go home. Whatever you guys need. So and that's a big thing (Focus group #520–522) Halpern et al. 2008

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		Supervisors, however, were perceived differently. Some paramedics reported feeling unsupported when their supervisors questioned why they were reacting to an event that they did not perceive as traumatic: I wasn't really involved in a traumatic event because there was no loss of life, or you know what I mean, um, it, there wasn't really much sympathy the, um, I could, not that I really, um, oh, this wasn't, um, a huge accident, you weren't injured, you know, really why are you complaining? Regehr et al. 2007 he's [supervisor] quite an old fashioned sort of police officer, not the bloke you would sort of want to go in and have a chat with about a sudden death you'd just been to If I went in and said 'Governor, can I have a chat about the sudden death?', he'd look at me as if I'd just asked to kill one of his children! Evans et al. 2013
	Peer	Nurse 1 "Therefore, talking to a person who has the same skills, abilities
	support network	and knowledge you have would probably be more meaningful". Carvello et al. 2019
		The majority of nurses is in favour of peer-supporters. The motivation is based on the fact that they recognise the peer-support as someone that can understand what nurses really mean when relating a traumatic event,
		being one of their colleagues. Carvello et al. 2019
Infor mal suppo rt	Colleague s and family	The more you talk about something, the more it becomes something you've told and your telling becomes part of the memory, as opposed to it being a really shiny, vivid thing inside your head*those images. Evans et al. 2013
		I don't think talking about it to people at work is the release, the escape I need it's speaking to people who I care about and who care for me and just having that comfort zone, that's what's important to me. [P16] Evans et al. 2013
		I never tell my wife that, I would never tell her that because I just think that would have really put the frighteners on her. [P15] Evans et al. 2013
	Regular	For me it's just always been that partner, because they're right there with
	partner	you and they'll know what's going on, and you really want somebody that can understand what's happening. Jessica et al. 2009
		for those of us that have regular partners, regular stations, rely on your partner They're gonna know if something's up with you. Drewitz-Chesney et al. 2019
	i .	Paramedics working with different partners may be unable to recognise

current partner, they often don't discuss calls. Instead, some participants said they speak with long-time paramedic friends or coworkers with whom they have similarities, ie. age or training level.

Drewitz-Chesney et al. 2019

...if I'm working with my regular partner, those communication lines are very, very open and we can talk about the tough calls, how we're feeling, if there's anything we would have done different [sic] (Sean).

Drewitz-Chesney et al. 2019

I really envy the paramedics that have regular partners that they know, and they trust, and they can talk to (Krista).

Drewitz-Chesney et al. 2019

... I would have a regular partner and that partner would be someone who is just like family to me. We would just talk about everything, without even hesitating...'

Drewitz-Chesney et al. 2019

Reassuran ce and validation

I remember going to the hospital and I remember I was disappointed because the parents weren't there at that time...And I don't know what it was. It was just something that made me feel like I just needed to talk to them. But I never ended up talking to them. So anyway that call definitely stands out as being...(Stuck with you.) Yeah. Halpern et al. 2009

And it's weird, I looked in the newspaper. I saw his funeral announcement and I went to the funeral. (Oh okay.) I didn't talk to any of the family. I just went for my own, I don't know why ... I, for some reason, I guess I felt I needed to follow up and so I did. And I sent the family a condolence card and then a friend of mine ...met a friend of the family's friend and he had said, oh, his [relative] wants to talk to you ... So she called me and she wanted to know, like, you know, what happened with her [relative] and who was the last one to talk to him ... It's kind of funny because there are so many calls you do and you never think about them again. But this one, I thought about him a lot. I guess because he was so young and again, I really didn't think he was going to die. So I thought, okay, well, you know, he's at the trauma centre now and I had no idea that he was that badly injured. And then he died. So I think that freaked me out. I wasn't prepared for that. And I thought, oh my God, he's so young and his family wasn't there. I felt badly his family wasn't there and then. So that one stuck with me for a while.

Interviewer: "And talking to his [relative], did that help or ...?"

It more, I felt it was helping them so it made me feel better, because she really, really was upset. And I felt she wanted, I think she felt a lot better after talking to me and hearing something about what happened. And so it made me feel better to give them some kind of closure.Pg 181-182 Halpern et al. 2009

			the day after that call, my supervisor kind of sensed that I wanted to talk to him and I don't know why, you know, he came to the hospital. But it was the next day and he was kind of like, so pull up a chair, sit down. Let's just talk. And it was like I wanted somebody just to say to me, okay, this is your time and you can talk right now and I'm not going to judge you. I'm not going to talk about anything. I'm going to let you just have your 10 minutes. And that made a huge difference. I have the utmost respect for my particular supervisor Whether it was talking specifi cally about the call or just having a little bit of a "hey you're okay at your job", type comment. (Participant #122) Halpern et al. 2008
Facto rs influe ncing help- seekin	Natur e of interv ention delive ry	Mandator y vs non- mandator y	We had counselling every six months and everybody used to go 'Oh I've got to see the counsellor this week', but I tell you what we all quite enjoyed it I was so much calmer after speaking to her but it's something I'd never have done had I not been made to do it. [P12] Evans et al. 2013
g behav iour	1,9		My emotions are none of your business and if I wanted to share my emotions with you, I'm going to share [them] with someone I trust Participant 1 from focus group 1. Douglas et al. 2013
		Shared experienc es with interventi on	FRs in our study preferred a MH professional with experience as an FR or military veteran. Many also approved of a provider that "knew the job," either working with multiple FRs in the past, or even as a family member. Jones et al. 2020
		provider	I've been to [therapy] a couple of times The guy that I got was excellent, but I only think it was excellent because he was prior military (P8, Firefighter ×22 years). Jones et al. 2020 (study 4)
			someone I think understands what's going on, and has been through what I've done Participant 3 from focus group 4. Douglas et al. 2013

Stigm a as a	'Macho culture'	I think there's a real element of machismo and masculinity in the police force and it's a bit, sort of a faux pas to admit that things have really
help- seekin gbarri er Specif ic		affected you If I'd have come out and said 'ah you know, that really affected me badly, let's go and sit down and have a cup of tea and talk about it' I think you're straying into pink and fluffy territory there saying 'that made me feel sad' is a bit too far. [P3] Evans et al. 2013
barrie		
rs		Everyone wants to be tough and strong. Maybe that was my downfall or problem at the time and I didn't want to admit that I needed any kind of help. I guess I didn't want to be perceived as weak. (Participant #110) Halpern et al. 2008
		that's so ridiculous. You need to harden up if you want to do this job, and old people die. Drewitz-Chesney et al. 2019
		in metro, there's a lot morebravado and joking around about
		thingsIf you can get one on one with someone, they're usually a lot more receptive and a lot more empathetic- (Dennis). Drewitz-Chesney et al. 2019
		Unfortunately there's a massive stigma [] one of my sergeants the other week, there was mental health training coming up and his reaction to being put forward to go on the training was, 'Well what do I want to go and learn how to deal with a load of nutcases for? Bullock et al. 2018
		We are many women at the station so its easier for us to talk about what happenedYou have to talk about what happened otherwise you can't go on. It's easier than on a station with only men, it's not necessary with any "macho style" so I think it's easier for the men (at our station) to talk about things you must talk about. (A female nurse describes her feelings.) Jonsson et al. 2003
	Stigma	As an institution, they were very very good, in getting me better, at
	and shame	making me understand, but back at work that was a different ball game. You've got your colleagues who are still at work, still running around like idiots and they're like, oh fucking hell, you've had three months off, you know, I should have gone off with stress. (Participant 1). Edwards et al. 2020
		There have been officers that are doing the shift that have shown that they can't deal with situations like that, and been very open about it*and they haven't got the respect from the shift, because the colleagues go 'well, you're on your own if you're working with her, because she'd back away' or whatever. So you don't want to be considered as one of those. [P7] Evans et al. 2013
	Career	I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judged as weak or you might get fired" (P2, EMT/paramedic ×20 years). Jones et al. 2020
		If you've a form of mental health illness you will not get on; you will not be promoted,people will not want you on their section. (Participant 4). Edwards et al. 2020

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		I feel scared to declare anything or do anything about anything because will it bite me later on in life? Will it prevent me from doing something in the police later on? Could it be used against me? will it be used in a negative way later on? Bullock et al. 2018
	Confident	I know our department's very, very poor at keeping secrets. So if I put a
	iality	crew out of service, I have to tell the communications center.
	concerns	Communications says, we're sitting this far apart, Hey X, I just put the 22 car out of service in stress. Every dispatcher in there hears it. Every call receiver in there hears it. So they hear it. I don't know if they say anything. I don't know if they go home and tell all their friends and family. But I don't like that system. There's no quiet way of doing it. (Participant #128) Halpern et al. 2008
		I think that the stigma is you have to be very careful who you tell that it bothered you or you might get judged as weak or you might get fired" (P2, EMT/paramedic ×20 years). Jones et al. 2020
		to whom must I speak in the police if I can't trust anyone. So now I'm seeking professional help outside the police . Boshoff et al. 2015
Ment l healt litera	awareness h	Some appreciated that difficulties in recognizing and admitting to distress pose significant barriers to accessing support. Recognizing the emotional impact of critical incidents may help to address these barriers. Halpern et al. 2009
		I didn't recognise it as what it was; I just thought I was grumpyyou don't see them creeping up, and in the end, the thing that tips you over the edge, the thing that makes your bottle overflow if you like can be something quite small because you've got used to dealing with stuff. (Participant 5). Edwards et al. 2020
	Education and stigma	I think for, for everybody, is, here's my thought towards your process, is giving them the tools. People are going to be very tough and say, yeah, yeah, fine. But you know if you could somehow identify the emotions that go along with these calls t hat might be starting to put you on tiltThen you can teach people to be aware of them and say, hey, you know what, it's okay to say, I need to talk to someone. Halpern et al. 2009
		In particular, it would appear from this study that teaching ambulance personnel about the emotional aspects surrounding different types of critical incident may diminish their confusion about which incidents they can expect to impact them. Halpern et al. 2009
		I guess that's the main two [barriers], pride and then denialBut, it's just education. Just letting [FRs] know, look, these things are normal. It's going to happen to somebody" (P11, Firefighter ×8.5 years). Jones et al. 2020

Knowing that other people are there dealing with that same stuff. You can bounce ideas off each other, see what's worked in their situations and what hasn't . . . you realize you're not crazy (P12, EMT/paramedic ×14 years). Jones et al. 2020

If you could actually get people in in front of officers saying, 'I was one of those people that didn't believe stress could ever get to that level and it was ridiculous and you just needed to work harder', maybe officers would accept that from another officer more than just somebody standing in front of you training because it's getting officers to accept that actually it's okay, you're only human and your body and your mind can only take so much, and maybe they'd accept it more then.

Bullock et al. 2018