

Title: *“I’ve got no PPE to protect my mind”: Understanding the needs and experiences of first responders exposed to trauma in the workplace*

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Background: First responders (FRs) are at high risk of being exposed to traumatic events in their occupational roles. Responding to critical incidents often involves exposure to life-threatening circumstances, dealing with fatalities as well as encountering highly stressful situations that may trigger traumatic responses. These experiences can lead to poor physical and mental health outcomes including post-traumatic stress disorder, co-morbid conditions such as depression, anxiety, substance abuse, insomnia, and suicidality. Little research has explored the perspectives and experiences of FRs in dealing with occupational trauma(s) and how best to meet their health needs.

Objective: This study aimed to explore FRs’ experiences of exposure to occupational trauma and its impact on their mental wellbeing. The wider objective was to investigate how FRs can be supported to access appropriate and relevant help, addressing barriers like stigma.

Method: A qualitative research design using in-depth semi-structured interviews with FRs (n = 54) was adopted. Interviews were audio-recorded, transcribed and analysed using an inductive thematic approach.

Results: Themes developed were: (1) The pervasive, cumulative and salient impact of occupational trauma on mental health (micro-traumas, nightmares, flashbacks and reliving experiences), (2) The demands of the job exacerbating the adverse effects of trauma (self and others), (3) Insufficient support and unhelpful ways of coping following exposure to trauma (lack of psychological safety), (4) Stigma and fear of judgement as barriers to mental

health help-seeking, and (5) Need for specific, accessible and credible trauma-focused interventions and workplace support.

Conclusions: The implications of these findings are discussed at the individual, service provider and organisational level, emphasising the importance of implementing a strengths-based, non-pathologising and de-stigmatising approach to trauma in the workplace as experienced by FRs. Emphasis is placed on the importance of overcoming barriers to accessing mental health support and improving access to evidence-based, trauma-focused psychological interventions and workplace support.

Highlights

- First responders regularly experience traumatic events in their workplace which can engender traumatic stress, which is further exacerbated by the demands and pressures of their jobs.
- First responders coping needs are not being met to a sufficient extent, especially in terms of psychological/mental health input.
- There is need for evidenced-based, easily accessible, occupation-specific trauma-focused interventions to support first responders with their mental health needs from occupational trauma-related stressors.

Keywords: First responder, occupational trauma, digital interventions, stigma of mental health help-seeking

1. Introduction

First responders (FRs); police officers, firefighters, ambulance workers and emergency medical workers are at high risk of being exposed to traumatic events in their occupational roles (Brais et al., 2023; Bryant, 2022; Joines, 2017; Jones et al, 2018; Regehr et al., 2002). FR occupational groups are known to fulfil different roles when responding to critical incidences (Davidson et al., 2023). Emergency medical and paramedic teams attend to the casualties' physical and medical needs (Eaton et al., 2021), while police and firefighters are generally responsible for safety issues, incident resolution and order among bystanders at the scene of an emergency (Nunavath et al., 2016). Nonetheless, all FRs are among the first to be present at a critical incident and often the very first to attend to the victims, casualties and/or fatalities (Kleim & Westphal, 2011). FRs are, therefore, routinely exposed to emotionally challenging, unpredictable and potentially traumatic situations (Greinacher, et al., 2019). Responding to critical incidents often involves exposure to life-threatening circumstances, dealing with fatalities as well as encountering highly stressful situations that increase rates of psychological distress (Pietrzak et al., 2014) and may trigger traumatic responses (Petrie et al., 2018). These experiences can lead to poor mental health outcomes (Feldman et al., 2021) including high levels of burnout (Benincasa et al., 2022), anger problems (Hinton et al., 2022), substance misuse (Bonumwezi, et al., 2022), depression (Whitworth et al., 2023), anxiety (Baker et al., 2023), somatic difficulties (Prioux et al., 2023), sleep problems (Reffi, et al., 2023), pain (Hourani et al., 2020), post-traumatic stress disorder (Surgenor et al., 2020) and suicidality (Bond & Anestis, 2023). There is evidence concluding that the adversities associated with exposure to occupational trauma have wider spillover effect on FRs' social (Bryant, 2022) and/or romantic relationships (Rennebohm et al., 2023) and family dynamics (Casas & Benuto, 2022). Furthermore, there is increasing evidence suggesting that FRs have distinct mental health presentations and support needs (Arjmand et al., 2024; Gilmartin, 2002; Lanza et al., 2018), yet often struggle

to seek and/or access help (Haugen et al, 2017; Smith et al., 2021; Tamrakar et al., 2020).

There has also been a growing recognition that there is a need for further research to explore the first-hand perspectives and personal experiences of FRs concerning the impact of exposure to occupational trauma on their mental health and wellbeing (Smith, Dean & Holmes, 2021) and to better understand their help-seeking behaviour and mental health support needs (Jones, Agud & McSweeney, 2020).

1.1 The current study

The primary aim of this study was to explore FRs' experiences of exposure to occupational trauma. A secondary aim was to understand the impact this had on their mental health and wellbeing as well as their help-seeking behaviours and support needs. To achieve these aims, we conducted an in-depth qualitative study to investigate the experience of FRs within the UK context. The research questions explored were as follows:

1. What are first responders' experiences of exposure to occupational trauma in their service settings?
2. What is the impact of exposure to occupational trauma on their mental health and wellbeing?
3. How do FRs cope with the impact of trauma exposure in their working roles?
4. How best can their mental health support needs be met?

2. METHOD

A qualitative research design using in-depth semi-structured interviews with FRs (n = 54) was adopted. The research team comprised of academic researchers from health promotion, social work, psychology and physical activity for health, mental health practitioners and a researcher and advocacy worker for a national mental health charity engaged with trauma informed practice. The research team worked in partnership with FR

organisations from the onset of the research through to its design, recruitment of FRs, data collection and analysis and dissemination of preliminary findings. This multi-disciplinary and collaborative approach helped to promote accessibility by grounding data collection in the experiences of those being researched (Macintyre et al., 2018) and to help the study produce more relevant, useful and practice-oriented knowledge for FRs (Vaughn & Jacquez, 2020). This democratisation of the research process required the research team to have clear structures to support team members with different kinds and levels of expertise and knowledge (Hafford-Letchfield, et al., 2022). This included providing formal training to the research team, facilitated by the lead researcher, on qualitative interviewing techniques and data analysis and opportunities for both verbal and written structured dialogue to facilitate mutual and reciprocal learning and understandings of the research process (Onwuegbuzie & Byers, 2014). Before interviewing commenced, researchers intentionally reflected on how their subjective beliefs and experiences could affect the research at all stages. This involved: reflecting on what the research topic meant to them and how their personal histories influenced their interest in the topic, what preconceived expectations they had regarding results and how these expectations may influence their interpretation of the research findings (Ash & Clayton, 2009; Ivey, 2023).

2.1 Participants

FRs were invited to take part if they were living in the UK, aged 17 years or older and were employed in FR occupations (for at least 6 months) at the time of the study. A matrix sample of FRs (n=54) was used to ensure key demographic characteristics such as age, gender and occupation were reflected in the sample (see table 1). Fifty four participants (n = 54) took part in this study. As is recommended for interview research that has an ideographic aim (Malterud et al., 2016), this sample size was sufficient to capture the voices of the diverse FR occupational groups yet allowed individual participants to have a locatable voice within the reporting of the findings. The participants' ages varied between 22 and 64 years (M =

40.84, SD = 11.78). 33 of the participants identified as male, 20 as female and 1 as non-binary. The majority of participants (81.48%) identified as being of white, British ethnic origin with the remaining participants identifying as being from ethnic minorities. In terms of occupational groups, 21 were paramedics, 15 were fire fighters, 12 were emergency healthcare workers and 6 were police (see table 1). Participants' number of years working in their occupational roles varied from 1 to 43 years (M = 20.98, SD = 12.34).

Table 1: Participants characteristics

| Total sample = 54 | Range | Frequency (N) or Mean (M) | SD or % |
|------------------------------------|-------|---------------------------|------------|
| Gender | | | |
| | | N = 33 | 61.11% |
| | | N = 20 | 37.03% |
| | | N = 1 | 1.85% |
| Age | 22-64 | M = 40.84 | SD = 11.78 |
| Ethnicity | | | |
| | | M = 44 | 81.48% |
| | | M = 5 | 9.26% |
| | | M = 3 | 5.55% |
| | | M = 2 | 3.70% |
| Occupation | | | |
| | | N = 21 | 38.89% |
| | | N = 15 | 27.78% |
| | | N = 12 | 22.22% |
| | | N = 6 | 11.11% |
| Years of working experience | 1-43 | M = 20.98 | SD = 12.34 |

2.2 Interviews

A semi-structured interview schedule was developed for the purposes of this project and informed by earlier research (e.g. Cogan et al., 2022; Greinacher et al., 2019). While the schedule had a strong focus on support and help-seeking in the aftermath of exposure to work-related trauma, it sought to gain broader insights into FRs' lived experiences of the dealing with trauma. The aim of the schedule was to gain an understanding of FRs' experiences of exposure to trauma in the workplace and its impact on: (1) mental health and wellbeing, (2) feelings of safety, (3) help-seeking and supports, and (4) interventions. Questions were developed and guided by guidelines for ensuring the safety and promotion of resilience of research participants (Alessi & Kahn, 2023; Isobel, 2021) and were developed in collaboration with FR organisations during the period of project inception. In the initial phase of setting up the research team, time was exerted into establishing a safe base and in developing trusted relationships among research team members (Batlle & Carr, 2021), preparing the interviewers for dealing with difficult and/or distressing content shared in interviews (Dempsey et al, 2016) as well as the potential impacts of secondary trauma in the interview process (Dickson-Swift et al., 2007). Role plays, scripted case studies and training in conducting sensitive interviews (Shea & Barney, 2015) was provided by the lead researcher who is an academic and registered mental health practitioner (Cogan et al., 2022). An infrastructure of support to interviewers was provided through interviewer check-in meetings, debrief sessions, research supervision and regular reflexive team meetings as a basis for establishing and maintaining safe working practices. Training and ongoing support and supervision in strategies in self-care, self-reflection and critical incident reporting was also provided to interviewers. The interview schedule questions were worded in a broad, open-ended and non-judgemental way to allow FR to respond in their own terms (DeJonckheere & Vaughn, 2019).

2.3 Procedure

Recruitment was conducted between January 2023 and June 2023. Individuals who were interested in taking part were able to access an online Participant Information Sheet (PIS) that provided them with details about the study and the researchers' contact details. Potential participants were then invited to complete an 'expression of interest' survey, where they provided basic demographic details and expressed their consent to participate by signing the consent form online. Once expression of interest was received by the research team, the potential participant was contacted by the lead researcher to arrange a convenient time for the interview to take place. All interviews were conducted online using Teams platform. Following completion of the interview, each FR was contacted via email by the lead researcher, who shared a Debrief Form with the FR. An online Gift Voucher of £20 was also sent to each FR as a thank you for their participation in the study. Interviews were transcribed in full verbatim and all identifying information was removed from the transcripts prior to analysis.

2.4 Analysis

Before the research team began formal analysis, each interviewer documented their reflections in their reflective journals on each interview experience and its affective impact on them (Finlay, 2012). This entailed interviewers' recording observations of their participants, the interview process, interviewer thoughts and associations during FR interactions during the interview, and what feelings were elicited in them at particular points in the interview process (Froggett & Hollway, 2010). The transcribed data was initially analysed using a reflexive thematic approach (Braun & Clarke, 2021) which is an accessible and theoretically flexible interpretative approach to qualitative analysis (Campbell et al., 2021). It facilitates the identification, analysis and reporting of qualitative data to derive meaning and create themes (Braun & Clarke, 2006; 2023). Given that thematic analysis is a flexible qualitative method, an inductive, critical realist approach was adopted, since this was in keeping with a data-driven, pragmatic analysis. In addition, the research team drew upon interpretative

phenomenological analysis (IPA) as both methods of analysis are underpinned by similar epistemologies, since IPA also takes a critical realist stance (Smith et al., 2021). IPA has a conception of the research participant as inherently self-reflective who, when faced with difficulties or challenging events, quite naturally attempts to make sense of their experience (Giorgi, 2011). It synthesises ideas from phenomenology and hermeneutics resulting in a method which is descriptive and interpretative (Pietkiewicz & Smith, 2014). The breadth and depth of experience discussed by FRs and elicited by the interview schedule meant that the data were suitable for both methods (Alase, 2017). Consequently, both pragmatic and phenomenological aspects of the FRs' perspectives could be explored, that is, the experience of living, working, and managing occupational trauma. This form of analytic pluralism has been used in earlier work to advance psychological knowledge by demonstrating findings which arise in the comparison between findings from the two analyses (Barker & Pistrang, 2021; Clarke et al., 2015; Spiers & Riley, 2019). Transcripts were analysed one by one using the data management programme NVivo - Version 13 (Lumvero, 2020). In the transcripts, the research team looked for complex ideas, particularly trauma-related issues, metaphors and critical moments (Eatough & Smith, 2017). The team engaged in a critical reflection of how the qualitative data was interpreted in order to capture any biases and misperceptions during the analytical process (Morse, 2015). Each of the research team members continued to retain their reflective journals throughout the research process to help capture any biases, paradoxes and/or inconsistencies throughout the research process (Castleberry & Nolen, 2018). Analyses focused on understanding the breadth and depth of FRs' experiences and building a picture of the impact of trauma exposure on their mental health and wellbeing, and what this meant in terms of understanding their mental health needs and supports as grounded in their own narratives.

First, transcribed data was read and re-read actively to allow immersion in the data and initial ideas were noted using memos (Maher et al, 2018). Next, data was organised at a granular level by labelling data extracts with relevant codes. An inductive, "data-driven" approach was adopted to code data, as the research team were not interested in trying to fit

the coding process into a pre-existing coding frame or specific analytic preconceptions (Clarke & Braun, 2017). As analysis progressed, a table of emergent codes was developed. Each new transcript led to codes being expanded or adjusted. Once all transcripts were analysed, the lead researcher refined the codes, looking for duplicate codes or emerging patterns (Roberts et al., 2019). Previously generated codes were examined and compared. Codes that were similar or overlapped were collated together and initial themes were constructed. Themes were reviewed, modified and developed to ensure that they were coherent and distinct from each other. This process was guided by critical reflective questions about the themes' meaning, interpreting any hidden meanings, boundaries and the amount of data to support them (Ivey, 2023). Themes were reviewed in relation to the entire data set to ensure that they captured the essence and tone of the data. A definition and narrative description of each theme was produced, and a thematic map was created to organise themes, sub-themes and representative extracts from the transcribed data. Finally, a report was produced to present a narrative of the data grounded in participants' perspectives (Clarke & Braun, 2017; Kiger & Varpio, 2020).

Rigour, transparency, and quality of reporting were followed using Qualitative Checklist Criteria, COREQ (COnsolidated criteria for REporting Qualitative research) guidelines (Tong et al., 2007) and APA Style JARS-Qual (Journal Article Reporting Standards) guidelines (Levitt et al., 2018). Some of the strategies used to ensure quality include maintaining an audit trail and a reflective journal throughout the study (Tomaszewski et al., 2020).

Prior to the conduct of the research, ethical approval was sought and provided by the University of Strathclyde Ethics Committee (UEC22/92). The participation of FRs was voluntary and followed both verbal and written electronic consent via Qualtrics. A key ethical consideration was the impact on researchers and participants from talking about trauma experiences (Legerski & Bunnell, 2010). The protocol drew on established guidance for working with people who have experienced trauma (Goelitz, 2020). FRs were provided with a debrief and signposted towards support services if needed as well as the opportunity to

discuss any concerns or issues with the lead researcher. Researchers kept a critical incident/reflective diary for their own personal use alongside interviewing. The team adopted guidelines on working with vicarious trauma (Caringi & Pearlman, 2009) and had regular debriefings and access to a registered clinical psychologist for signposting and self-care advice when working with trauma (Cohen & Collens, 2013). In terms of the reporting of the research findings, the team recognised that some readers may find the content distressing. Following reflexive discussions within the team and with FR organisations involved in recruitment for the study, it was agreed that it was important to retain the magnitude and salience of the data reporting on FRs' experiences of occupational trauma while being mindful of the potential impact of sharing such experiences on the reader.

3. RESULTS

The themes and associated sub-themes developed were: (1) The pervasive, cumulative and salient impact of occupational trauma on mental health (micro-traumas, nightmares, flashbacks & reliving experiences), (2) The demands of the job exacerbating the adverse effects of trauma (self and others), (3) Insufficient support or access to psychological input following exposure to trauma (lack of psychological safety), (4) Stigma and fear of judgement as barriers to mental health help-seeking, and (5) Need for specific, accessible and credible trauma-focused interventions and workplace support. (see diagram 1).

3.1. Theme (1) The pervasive, cumulative and salient impact of occupational trauma exposure (micro-traumas, nightmares, flashbacks & reliving experiences)

Evident among all FRs' accounts was reference to the pervasive and salient impact of exposure to traumatic events in their day-to-day working roles and routine duties. It was not only major critical incidents and/or disasters that were found to adversely impact on their

mental health and wellbeing, but also the cumulative impact of exposure to traumatic stressors on a routine basis. Traumatic stressors that FRs referred to included witnessing the traumatic responses of others (fear, anxiety, shock) and/or grief of loved ones/bystanders of causalities and/or fatalities, responding to mental health crises (e.g. self-harm, overdoses, completed or attempted suicides), dealing with potential life-threatening situations and dangerous environments (e.g. road traffic accidents, burning buildings) and risk of personal assault and/or abuse while on duty (e.g. verbal or physical abuse; damage to equipment). The physical and/or mental “threatening and traumatic” (Paula, healthcare worker) work-based situations that FRs encountered were evident across all accounts. Sarah described the trauma she experienced in relation to not being able to relieve a patient’s pain:

It was like trauma, bad jobs. It was just the horrible jobs. You know where you couldn't get pain relief in a person because their veins were collapsed and you were watching a patient in pain. And it was things like that. And I had quite a run of these and I got really run down (Sarah, paramedic).

The aftermath of dealing with traumatic events at work, including exposure to causalities and/or fatalities was a common stressor, as Michael remarked:

Seeing a burned body, feeling the burned body for the first time...that could be you traumatised (pauses) that could be you awake in the middle of the night dreaming about burned bodies (Michael, firefighter).

The impact of sharing “bad news” (Laura, healthcare worker) relating to highly emotive and distressing experiences that impacted on wider family and/or social networks of

causalities and fatalities was another major stressor. For example, William recounted the distress he experienced in relation to informing a parent that her son had committed suicide:

It's like the screams of telling a mum that that their son (has) completed suicide. You know, these things will always be there. You know, you'll never not hear them again (pauses) It stays with you, like a loop in your mind (William, police).

FRs emphasised how “bad jobs” (Sam, paramedic), “traumatic incidents” (Pauline, police), “dealing with death” (Jennifer, healthcare worker), “life and death decisions” (Barry, medical doctor), “moral dilemmas” (Robert, doctor), “responding to hangings” (Clarrisa, paramedic), “assaults on the job” (Tom, healthcare worker) were significant stressors that had affected them and had a detrimental impact on their mental health and wellbeing. In describing these cumulative traumatic events, Callum referred to them as being “micro-traumas that just build up over time” (Callum, healthcare worker). Apparent throughout FRs’ accounts was a sense that the accumulative impact of trauma incidents was a significant stressor; as captured by Walter:

I think it is when you're going to a stabbing and then another stabbing and another cardiac arrest or another assault or another, whatever...that's when you just can't take it any longer (Walter, Paramedic).

FRs described how frequent exposure to “back-to-back trauma” (Nathan, paramedic) and/or traumatic incidents lead to “burnout” (Mary, police), “major anxiety” (Susan, paramedic), “mental exhaustion” (Tom, firefighter), “numbness” (Robert, paramedic), “disconnect” (Bill, firefighter), and being “demoralised” (Sarah, healthcare worker). They made reference to having experienced “flashbacks” (Jill, healthcare worker), “re-living it” (Billy, healthcare worker), “nightmares” (Robert, paramedic) and “horrible daydreams”

(Karen, paramedic) associated with such incidences and “like it’s (traumatic event) all happening again” (Rubin, police).

You get flashbacks (...) if that’s what you call them. Your memory automatically goes to these places where you’ve maybe been to an incident where a certain bit, you know, somebody’s they lost their life at that particular bit of the road or in that house or whatever it may be. And so there is, you know, automatic memory joggers that when you’re going about your daily life. So that is, I suppose that’s always in the background. As I say, I feel as if I’m quite mentally strong. You don’t need to be mentally strong to not to have an understanding or be affected (Martin, firefighter).

Many of the FRs also raised concerns about the future impact that frequent trauma exposure had in various aspects of their lives, such as “work, home life and relationships” (Billy, paramedic). They feared “trauma resurfacing” (Phillip, healthcare worker) and it having a detrimental effect on their ability to function.

I’ve had some mental health challenges myself. I would never ever change it cause I think what I do in my job, what I get out of it personally, you know positives (pauses), but you get bad jobs and I think that when you come into the job that’s gonna happen because you’re invited into everybody’s lives at the most traumatic times. You know you can’t come out that untouched. I’ve seen trauma. I’ve seen stuff, you know... And, you have to be strong at the time, obviously. But it would be afterwards you would take some of these jobs home with you. It does have an impact mentally and how you function (Sarah, paramedic).

3.2. Theme (2) The demands of the job exacerbate the impacts of trauma (self and others)

FRs discussed the multiple demand of their working roles and pressures which they were routinely faced with. Unpredictable and “changing shift patterns” (Donald, paramedic) and “difficult working environments” (Terry, firefighter), “heavy workloads” (Fiona, healthcare worker), “staffing shortages” (Darren, police), limited and sometimes insufficient resources resulted in “little down time” (Stewart, paramedic) to discuss the impact of traumatic events that occurred at their places of work. The limited opportunity to process the impact of trauma due to the demands of their working roles was an issue raised by John:

It's that dealing with everybody else's trauma all day. When you're trying to process your own stuff. I suddenly found I can't deal with work and that it's like having that emotional trauma professionally and then personally it just becomes overwhelming. I struggle to sleep, even after a long shift (pauses). I'm tired but my mind wont rest (John, paramedic).

A reoccurring issue reported by FRs pertained to their perception that they were experiencing “more calls, less resources” (Emilia, paramedic) and this further exacerbated the negative impact on their own mental health and wellbeing. Despite, many of the FRs emphasising that they found their working roles provided “meaning and purpose” (Aiden, firefighter), “pride” (Helen, HCWs), “standing in the community” (Pauline, Police), “status” (Vincent, healthcare worker) and “camaraderie” (Bob, firefighter) that helped them in dealing with the more difficult aspects of being a FR, they pointed to how the demands often outweighed the rewards:

The job is very rewarding and also very demanding (pauses). Certain things, and it's been recent, I've had to start asking for help because of some of the jobs.

Unfortunately, it's been quite a lot. Recently, where we've had a lot of really bad jobs – it's been at least one fatality a month. So that's been the same way now for the past five or six months. So it's been emotionally demanding. Everything still has been awesome, so it has, these are all the bad things, but I've had really good jobs like I've saved children before, but it's the really bad ones that I'm struggling to get rid of (Larry, firefighter).

Fears about the impact of exposure to work-related traumatic stressors on their peers and fellow work colleagues was a common concern. While many of the FRs highlighted how they sought to “support each other” (Scott, paramedic), “trust” (Jim, firefighter), “understand what we do” (Simon, paramedic) and that there was a sense of “we get each other and what we do” (Henry, firefighter) that helped them deal with traumatic stressors, they recognised that such stressors were often overwhelming among their peers. For example, Darren pointed to how he had observed the negative impact of trauma on his colleagues over time:

It's a slow drip effect and over years and years you can see it... within a few years you can see them (colleagues) and they're completely destroyed (Darren, Police).

For others, it was the concern of how it adversely impacted on family and/or loved ones; as Liam stated, “how do you not bring that home with you?” (Liam, firefighter). The “rippling effect” (Fiona, healthcare worker) of trauma was the sense that it also had consequences for family and life outside of their work. While some FRs described how they sought to try and “protect them (family) from it” (Danny, firefighter) by not discussing or going into any of the details of what they had experienced at work, they recognised that this still caused worry for their loved ones.

It's like the incidents themselves have caused me to feel low or, you know, question things or feel a bit traumatised by it. But when I've we've been struggling at home and my wife, not feeling so great or I'm under a lot of pressure, I start feeling a bit overwhelmed and then some of these negative thoughts came in... I worry how that effects my family (Sam, Police).

3.3. Theme (3) Insufficient support or access to psychological support following exposure to trauma (fear of the floodgates opening up).

Evident among all the FRs' accounts was a sense that there was insufficient support and/or recognition of the negative impact of trauma exposure in their working roles. While there was reference to attempts within their respective occupations to address wellbeing and improve mental health, there was very little reference to support specific to dealing with workplace trauma.

The support bit, it's just not there, I mean we pay lip service to it but really when it comes down to it, we really don't talk about the things we see on a shift or how it affects us (Jane, healthcare worker).

The majority of FRs reported that there was little support in place to protect their mental wellbeing and shared their frustrations with the "system and management" (Simon, paramedic) in discussing the perceived lack of support available to them in the aftermath of dealing with traumatic work-related stressors. For example, Tony shared:

It's just sit and have a cup of tea, take an hour off and then, bang you're away. Sometimes it works, sometimes it doesn't (Tony, paramedic).

The majority of FRs referred to how they sought to try and avoid thinking about the traumatic experiences they encountered and how they often managed the impacts of trauma exposure by “putting it to the back of my mind” (Evan, healthcare worker), “push(ing) them (trauma memories) down” (Nathan, paramedic), “just getting on with it” (Gillian, paramedic), “suppressing it” (Kevin, healthcare worker), “avoiding it” (Joe, Police), “trying to move on” (Robert, firefighter) and/or trying to “forget about what’s happened” (Joseph, paramedic). Despite such efforts to cope, it was apparent that they were concerned about the wider impact on themselves; as detailed by Sally:

It's a worry that when I'm out in the road I'm going to get a job that's going to change me forever (pauses). How do I deal with that? I just don't know where to turn with getting the help for that (Sally, paramedic).

In trying to explain how they sought to deal with traumatic incidents that they had been exposed to in their working roles, they used metaphors to help describe how they coped. For example, Nathan referred to the “locker” in his mind:

You need to push them (trauma memories) down and try to get them away... they're only put in the locker in your mind. You know, they've never really gone away (pauses). And you're worried is there that much in the locker that someday the locker will burst and what would I do then? (pauses) We need more help from counsellors or psychologists that know how to help us with it (Nathan, paramedic).

Similarly, Gary talked about the “black box” in his mind where he tried to store traumatic memories as he felt that was the only way he could deal with it given that there can be lengthy waiting times to see a mental health professional:

I have dealt with a number of traumatic experiences, significant incidences and then probably some. Yeah, aye ((laughing)). There's quite a few to be fair, but I've kind of, a lot of us speak about a wee black box that we've got in our heads and we'll deal with it. We'll file it away. But yeah, there's quite a number of incidents I could, I could probably bring back to the forefront of my memory if I wanted to (pauses) but I wouldn't know how to deal with it or how to get help for it. That's for the (mental health) professionals but you just can't get an appointment to see them... it takes forever with waiting times (Gary, firefighter).

The strategies that many of the FRs adopted to try and support themselves and each other were not considered to be sufficient in the long term as often they expressed their concerns about the future impact of trauma exposure and the lack of support they perceived there to be in dealing with it:

I can vividly recall what I've seen and what I went to with some jobs. I worry that that's going to come back. I worry that there'll be some days, that you know, things I've been able to shut off from will open the floodgates, and I'll not be able to stop it. I won't be able to do what I do. That's a worry for me, I just don't think there's enough support for that" (Mark, firefighter).

While many of the FRs described how they drew upon informal support from family, friends and their peers in dealing with day-to-day stressors, they rarely sought help from them in coping with traumatic stressors. It was evident that they recognised that there was a need for more specialist and/or psychological support to address the impact of trauma exposure on their mental health and wellbeing.

“I've got no PPE to protect my mind and that's what leaves you in a bit of a vulnerable position... I don't feel safe in a psychological sense. I need more help with that (pauses), you know, with someone that really understands it and how to deal with it” (John, paramedic).

A perceived lack of mental health support and the need for more psychological input was apparent among the majority of FRs accounts, with FRs detailing that there had been “increasing organisational pressures” (Nicola, healthcare worker) and “strains on the NHS and emergency services” (Emilia, paramedic) which meant that there was less resources yet more demands in their working roles. Consequently, the majority of FRs recounted that they felt there was “little time to debrief” (Robin, firefighter) or “take recovery time” (Rhys, paramedic) after traumatic incidents in the current organisational climate. Some of the FRs made comparisons with resources or working conditions in earlier years, in their occupational roles, that they had found helpful in letting them de-stress; as William recounted:

Back in the day you could get back to a messroom (staff room) and you got lunch breaks and dinner breaks and whatever, you don't get them anymore, or they're far and few between... We used to call it mess-room therapy, whereby you were going to a mess-room and you would chat to your colleagues. That helped but it wasn't really enough” (William, firefighter).

3.4. Theme (4) stigma and fear of judgement as barriers to mental health help-seeking (negative consequences of not dealing with trauma)

Stigmatisation and fear of judgement served as a major theme across FRs' accounts whereby they detailed their experiences of stigma in relation to both expressing the negative

impacts of work-related traumatic stressors and communicating with colleagues and/or management regarding mental health issues. Many of the FRs spoke of the internalisation of stigma within their occupations as a barrier to voicing their concerns and how this inhibited mental health help-seeking. A sense of being “unheard” (Gerry, paramedic), “outed if you say anything” (David, firefighter) and questioning “who cares anyway?” (Rubin, police) was apparent across FRs’ accounts.

When asked about how their wider organisational environments dealt with matters concerning staff mental health and wellbeing, it was evident that there was a perception that stigma surrounding mental health acted as a barrier to disclosure. The stigma surrounding mental health was perceived as being an “cultural taboo” (Alison, paramedic) across FR organisations; this was captured by Darren:

It was (is) certainly a stiff upper lip culture, you know you just get on with it (Darren, police).

Many of the FRs described how disclosing difficulties associated with mental health and trauma was often perceived as a sign of “weakness” (John, firefighter) or that “If you can’t hack the job, you just shouldn’t do it (pauses). That’s why we don’t discuss it” (James, paramedic). Many of the FRs made reference to the “macho” (Darren, police) working culture that served as a reason for FRs not speaking up about mental health concerns. A fear of “what others will think” (Helen, paramedic) and concern for how they would appear to others and/or be treated by others was emphasised; as Garry remarked:

(There are) people with the attitude that if you suffer from mental health problems, then this is obviously not a job for you... you’re clearly not, not cut out for it. It has been said that folk like me, who have PTSD shouldn’t have any job, that we’re clearly not fit to be in any job (Garry, police).

A fear of judgement in how others would view their performance and “questioning your abilities to do the job” (Fiona, healthcare worker) was a strong barrier in voicing mental health concerns. Instead, the majority of the FRs felt that there was a need to “put your game face on” (Karen, paramedic) as opposed to discussing mental health concerns. In addition, a fear of the consequences of “speak(ing) up” (Zoe, healthcare worker) was also voiced. Concerns about how disclosing mental health concerns may raise questions in relation to fitness to practice with their respective regulatory bodies was an issue.

There's a fear. There's a big fear...About the [professional regulatory body]. Your registration because you've got a mental health condition... because if you speak, you're fired (Gerry, paramedic).

As a result of the internalisation of stigma and fear of judgement within their respective organisations, FRs voiced that although they “can't speak about it” (Emilia, healthcare worker), they were aware of how “not dealing” (William) with work-related traumatic stressors had the potential to adversely impact on their long term mental health and their ability to do their jobs effectively; this concern was voiced by Steven:

If we don't talk about it, if we don't try and deal with things and learn, our service won't get any better. People will keep being impacted and it'll keep having a negative effect on our ability to do our jobs well (Steven, paramedic).

The importance of overcoming stigma and fear of judgement through open discussion and acknowledgement of trauma in the workplace was viewed as being fundamental to organisational change.

3.5. Theme (5) Need for specific, accessible and credible trauma-focused interventions and workplace support

A reoccurring theme throughout FRs' accounts was the importance of specific, credible and accessible work-based supports to help them in dealing with traumatic work-related stressors. When discussing what they would find helpful, FRs emphasised that support in dealing with traumatic stressors needed to be "specific to first responders" (Terry, firefighter). The "unique (mental health) needs" (Evan, healthcare worker) of FRs was emphasised and it was often reported that others "just don't get it" (Sally, paramedic). A sense that FRs are "different from others" (Rubin, police) and "other members of society don't understand us" (Darren, police) was evident across FRs' reflections on their working roles and the traumatic stressors they faced.

In considering what would be important to FRs in terms of the kinds of support that they would view as "credible" (Harry, firefighter), FRs pointed to the importance of there being a strong knowledge and, preferably, experience of life as a FR, which can be evidenced by Gillian and Michael:

We often say that people that aren't in the emergency services, the fire or police, or search and rescue or that (other first responders) will never understand. Anyone trying to provide help needs to know about what we do (Gillian, paramedic).

We can't have that chat without someone, you know, really getting it (Michael, firefighter).

FRs viewed themselves as different to other occupations given the nature of their working roles and the traumatic stressors they are exposed to. The sense that FRs require an intervention "that's tailored" (William, police) to meet their mental health needs was

evident across FRs' accounts. All FRs stated that they would be more likely to share and seek help for mental health concerns if they could speak to someone with "an understanding of what we do" (Sally, paramedic). Additionally, FRs suggested they were more likely to access help if it could be "completely anonymous" (Gerry, paramedic) and "confidential" (Vincent, healthcare worker) given the perceived stigma surrounding mental health that was prevalent within and across FR occupational groups:

It should be completely anonymous. So they don't know who they're talking to because they won't be embarrassed that way... they won't get made to feel like they're unfit for the job (Emilia, paramedic).

Of the few FRs that shared experiences of having sought help in dealing with work-related traumatic stressors, it was apparent that lack of accessible interventions and/or support was a problematic issue. Experiences such as "long waiting times" (Aileen, paramedic) to see a mental health professional along with what was perceived to be insufficient support such as "you only get up to six counselling sessions at work then you're out" (Ian, healthcare worker) meant that FRs often reported that there was limited access to support for their mental health. While "peer support" (Tyler, firefighter) was viewed as being the most accessible source of support available among FRs, it was often not deemed sufficient in itself in coping with traumatic stressors. The need for "timely" (Elizabeth, healthcare worker) help and support was viewed as essential in order to help prevent FRs from experiencing occupational burn-out:

There are some really good and talented (first responders) out there that need help to stop them from burning out and not managing to do this incredibly unique and challenging job" (Nelson, paramedic).

FRs considered a range of different ways in which mental health supports and interventions for dealing with work-related traumatic stressors could be offered to them including “face-to-face help” (Zoe, healthcare worker), “in-house” (Owen, firefighter), “online chat-room” (Fiona, healthcare worker), “website for us only” (Mohammed, paramedic), “self-help advice” (Kerry, paramedic) and “like a digital app on my phone” (Peter, firefighter). They also emphasised that in order for such supports to be accessible, they would need to be available “out of (working) hours” (Darren, police), and to be “around changing working shifts” (Liam, paramedic). Interestingly, the majority of FRs thought that a digital intervention would be acceptable, albeit it would need to be “private” (Yvonne, paramedic) and a “safe space” (Darren, healthcare worker) to get help.

Having an app available on our work phones would be beneficial because everybody would have it, it would need to be confidential (Garry, police).

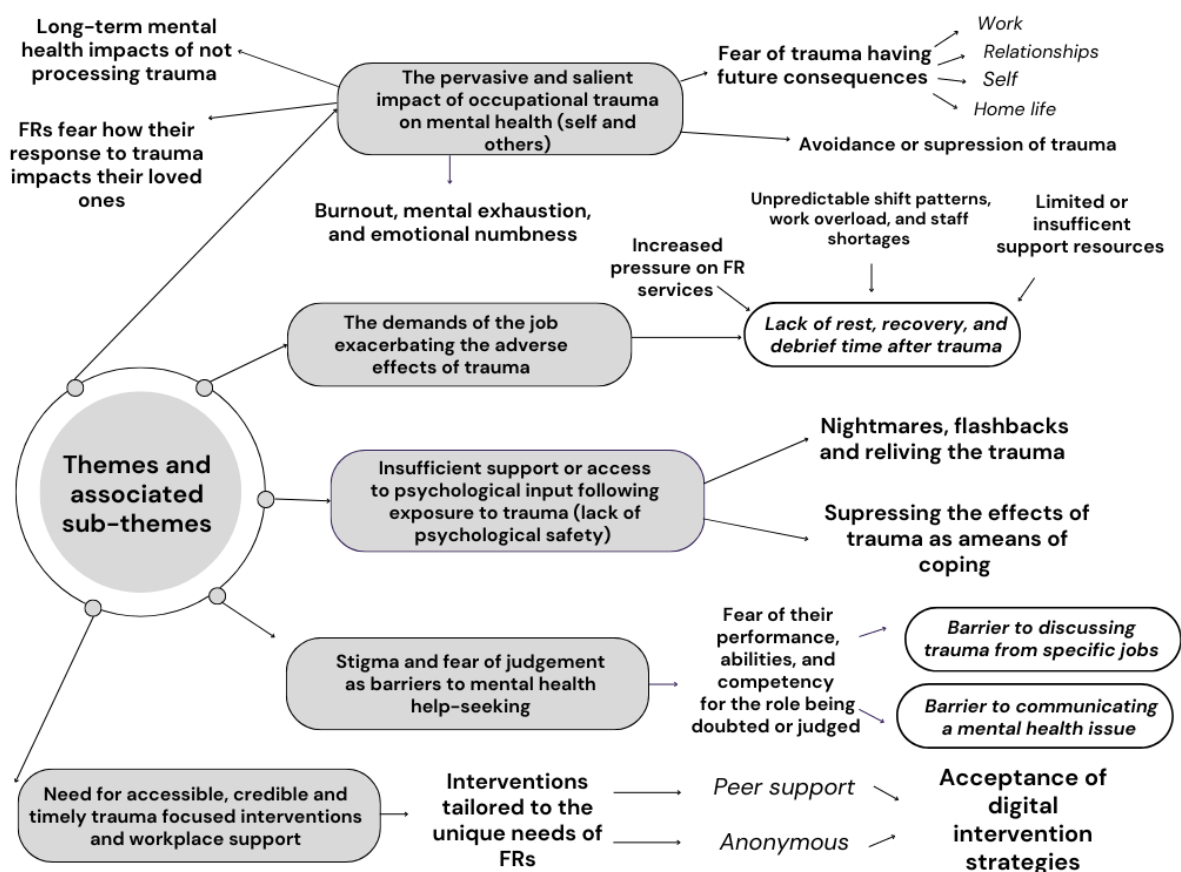
So if you have nobody to debrief with (pauses) if we had something that could replace that, that’s digital technology that might be really good (Sally, paramedic).

Nonetheless, it was evident that there was a need for a range of different supports and interventions to be made available to meet the diverse mental health needs of FRs exposed to work-related traumatic stressors. Essential, the need to have time and space to process traumatic experiences and to “find a balance” (Jennifer, healthcare worker) was evident across FRs’ accounts. The importance of there being interventions and/or work-based supports that were trauma-focused and able to meet the mental health needs of FRs was emphasised by Simon:

We need to try and get a balance, you know, body getting exercise, activity, connectedness, and most importantly, enjoyment and mastery and pleasure in things. And I think there is definitely a balance that’s to be had with that, that’s

doesn't always exist. We need more support at work with this too. It just seems you work only then to go home and sleep to get back up and do the same thing again, and sometimes very, very extensive hours in that. So there's no time to decompress. There's no time to process some of what were quite traumatic experiences (pauses) instead you ruminate on them. Not being able to find particular closure and only then to not sleep properly to waken up and replay the same scenario again. We need help to get that balance and that space to process what we've been through with someone that understands it (Simon, paramedic).

Diagram 1: Thematic map of first responders' experiences of exposure to traumatic stress



4. DISCUSSION

In this study, we aimed to explore the lived experiences and perspectives of FRs in the UK, specifically concerning their unique mental health needs in dealing with occupational trauma and the barriers they face in accessing support. This study found that FRs were proud of their occupation, however, they reported the potentially negative impacts of their roles, and unmet support needs which need to be addressed. Across all FR groups there is a cumulative impact of exposure to significant traumatic stress. These traumas build up over time and lead to substantial mental health problems including burnout, anxiety and exhaustion. As found in earlier research (Afshari et al., 2021; Betts et al., 2024; Billings & Focht, 2016; Kirby et al., 2016; Marvin et al., 2023) the work environment exacerbates this with unpredictable shift patterns, poor sleep, heavy workloads, staff shortages and lack of resources. Little time is given to allow processing and support of traumatic events. Some FRs seek support from colleagues, but more often these traumatic experiences are put to the back of their mind and there is concern about the future impact of this. Resources to support staff are limited and stigmatisation and fear of judgement are significant barriers to seeking support. The situation is, arguably, getting worse as workloads increase further and staff breaks are compromised, giving little time to talk and reflect. There is therefore a critical need for further work to explore how to effectively support FR groups with trauma management.

FRs also emphasised the impact of occupational trauma on their wider social networks, including family and friends. As concluded in previous studies within the field (Casas & Benuto, 2022, Rennebohm et al., 2023), this study found that the trauma exposure within FR occupations results in poor support-seeking within personal relationships, and the over-spill effect of trauma (Casas & Benuto, 2022). In addition to major traumatic events such as dealing with death and dying, FRs described “micro-traumatic events” as traumatic stressors that cumulatively impacted their day-to-day functioning. This finding is aligned with earlier psychoanalytical understandings of the small, cumulative psychic injuries associated with micro-trauma that can build up and adversely impact on a person’s sense of self-worth (Crastnopol, 2015). In line with earlier work detailing the risk of

trauma exposure within these roles (Byrant, 2022), FRs pointed to how the demands of their working roles exacerbated the adverse effects of trauma in the workplace. FRs discussed the lack of downtime between traumatic jobs and opportunity to debrief or seek managerial support as a contributor to the negative impact of trauma exposure. This finding is supported by previous research which concluded that within the occupation, there was a perceived lack of management support (Tjin et al., 2022). While many of the FRs in the current study acknowledged the informal support they gained from colleagues in dealing with the aftermath of traumatic events, they emphasised that this in itself was insufficient in meeting their mental health needs. The uniqueness of these occupations in terms of the salience of and frequency to trauma exposure, uncontrolled work environments and work overload demonstrates the timely need for specific support. As reported in earlier work (Rodrigues et al., 2023), a particularly demanding aspect of their working role concerned dealing with morally challenging decision-making. Experiences of moral injury were found to have had a negative impact on FRs feelings towards leadership and the wider healthcare system and public sector organisations they worked for and with. The need for timely access to psychological input following exposure to trauma was viewed as a priority for those who needed it. Reviews on early intervention for FRs have addressed the importance not only of timely access, but to have support delivered according to FRs culture, with the importance of peer support at the root (Cnapich et al., 2022; Richins et al., 2020). The absence of such timely support was viewed as adversely impacting on FRs' sense of safety in the workplace. Lack of psychological safety within the workplace has been an area of growing concern among FR organisations and health and social care workers (Hoegh et al, 2024), and there is a need for further research to measure its impact at both an individual and team-based level (Morton et al, 2022).

FRs also described how stigma and fear of judgement within FR organisations, as well as externally, acted as a barrier to mental health help-seeking. This finding is in support of the growing body of research which has discussed the "stiff upper lip" culture in FRs, hypothesising that FRs are less likely to seek support for their mental well-being due to the

fear of judgement and being viewed as having a lack of ability to do their job (Auth et al., 2022). FRs demonstrated a fear that their colleagues, managers, and regulatory bodies would raise concern for a lack of confidence in their abilities and deem them unable to perform to the acceptable standards within their job if they voiced mental health concerns. The findings of this study are in line with previous research which suggested that the view that colleagues and management had on FRs and their ability to do the job served as a main contributor to FRs role-identity in that they internalised the stigma that mental health conditions were associated with a lack of ability (Mausz et al., 2022). Finding ways to overcome stigma and reduce barriers to mental health help-seeking is essential to meeting the mental health needs of FRs (Cogan et al., 2024). Recent work has highlighted how FRs experience challenges in accessing and engaging in traditional, face-to-face mental health interventions (Johnson et al, 2020) as well as FRs' anticipating adverse outcomes from treatment, stigma, and how organisational barriers may inhibit treatment engagement (Zolnikov & Furio, 2020). The research team are currently engaged in further research to explore ways to better meet the needs of FRs, informed by the current study, including the development of a digital intervention, which have become increasingly popular in overcoming barriers related to mental health stigma (Borghouts et al., 2021) and challenges in accessibility in accessing face-to-face mental health support (Griffith et al., 2022). It is evident that addressing such complex issues requires individual, team-based and organisational supports and resources to systemically improve workplace mental health practices and develop trauma informed systems of care within and across FR organisations (Kim et al, 2021).

4.1. Strengths and limitations

This study has a number of strengths. We recruited a broad sample of FRs which gave us the opportunity to explore different perspectives among FR occupational groups.

Our research team was also diverse, consisting of scientists from different backgrounds and clinical experience, and including different genders, cultural groups, and career stages. This enabled us to consider our findings from multiple perspectives and build a rich and in-depth analysis.

This study also has some limitations. First, whilst we sought to gather a variety of FRs' views, we were only able to learn from the experiences of six police officers. It would be important to hear from other police officers in addition to other FR professions such as community FRs and military personnel to expand our understanding. Our sample was also limited by a small number of FRs from ethnic minority backgrounds. FRs from minority groups may have had other views and experiences to add to this study. It would also be beneficial to consider the views of FRs' family and friends given that FRs in our current study expressed their concerns relating to the impact of trauma on their loved ones. Further research paying attention to these groups will help more FR voices be heard and provide important information to tailor support and interventions.

5. CONCLUSIONS

In this study, we aimed to explore the experiences, views, and needs of FRs concerning management of occupational trauma. FRs put their lives at risk to help those within communities during their most vulnerable moments, leaving resounding effects on FRs in the aftermath. Supporting the mental health and wellbeing of FRs is essential not only for their own wellbeing, but also to support the work that FRs do and the sustainability of the health and social services they provide. There is, therefore, an urgent need for support mechanisms for trauma management in FR including interventions to be developed which are accessible, credible, timely and available out with working hours. Interventions need to be specifically developed for FR groups to effectively address their unique mental health

needs. Further support mechanisms are also needed to reduce stigma and improve working balance, allowing time and space for reflection and discussion.

The implications of these findings have been discussed at the individual, service provider and organisational level, emphasising the importance of implementing a strengths-based, non-pathologising and de-stigmatising approach to trauma in the workplace as experienced by FRs. Emphasis is placed on the importance of overcoming barriers to accessing mental health support and improving access to evidence-based, trauma-focused psychological interventions and workplace support. The findings will inform the development of interventions which aims to provide an accessible and credible solution to the prevention and management of traumatic stress for FRs.

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Declaration of interest statement

There is no conflict of interest to declare.

References

- Alase, A. (2017). The interpretative phenomenological analysis (IPA): A guide to a good qualitative research approach. *International Journal of Education and Literacy Studies*, 5(2), 9-19. <https://doi.org/10.7575/aiac.ijels.v.5n.2p.9>
- Alessi, E. J., & Kahn, S. (2023). Toward a trauma-informed qualitative research approach: Guidelines for ensuring the safety and promoting the resilience of research participants. *Qualitative Research in Psychology*, 20(1), 121-154. <https://doi.org/10.1080/14780887.2022.2107967>
- Afshari, A., Borzou, S. R., Shamsaei, F., Mohammadi, E., & Tapak, L. (2021). Perceived occupational stressors among emergency medical service providers: a qualitative study. *BMC Emergency Medicine*, 21, 1-8. <https://doi.org/10.1186/s12873-021-00430-6>
- Arjmand, H. A., O'Donnell, M. L., Putica, A., Sadler, N., Peck, T., Nursey, J., & Varker, T. (2024). Mental health treatment for first responders: An assessment of mental health provider needs. *Psychological Services*. <https://doi.org/10.1037/ser0000832>
- Ash, S. L., & Clayton, P. H. (2009). Generating, deepening, and documenting learning: The power of critical reflection in applied learning. *Journal of Applied Learning in Higher Education*, 1(1), 25-48.
- Auth, N. M., Booker, M. J., Wild, J., & Riley, R. (2022). Mental health and help seeking among trauma-exposed emergency service staff: a qualitative evidence synthesis. *BMJ open*, 12(2), e047814. <https://doi.org/10.1136/bmjopen-2020-047814>
- Baker, L. D., Ponder, W. N., Carbajal, J., Galusha, J. M., Hidalgo, J. E., & Price, M. (2023). Mapping PTSD, depression, and anxiety: a network analysis of co-occurring symptoms in treatment-seeking first responders. *Journal of Psychiatric Research*, 168, 176-183. <https://doi.org/10.1016/j.jpsychires.2023.10.038>

- Barker, C., & Pistrang, N. (2021). Choosing a qualitative method: A pragmatic, pluralistic perspective. In P. M. Camic (Ed.), *Qualitative research in psychology: Expanding perspectives in methodology and design* (2nd ed., pp. 27–49). American Psychological Association. <https://doi.org/10.1037/0000252-002>
- Battle, I. C., & Carr, S. (2021). Trust and relationships in qualitative research: a critical reflection on how we can value time. In *Temporality in Qualitative Inquiry* (pp. 158-171). Routledge.
- Benincasa, V., Passannante, M., Perrini, F., Carpinelli, L., Moccia, G., Marinaci, T., ... & Motta, O. (2022). Burnout and psychological vulnerability in first responders: monitoring depersonalization and phobic anxiety during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 19(5), 2794. <https://doi.org/10.3390/ijerph19052794>
- Betts, C., Stoneley, A., Anderson, J., & Sutton, C. (2024). Understanding the Occupational Factors that Influence Paramedic Health and Wellbeing: A Scoping Review. *International Journal of Paramedicine*, (6), 132-151. <https://doi.org/10.56068/MNRG8307>
- Billings, J., & Focht, W. (2016). Firefighter shift schedules affect sleep quality. *Journal of Occupational and Environmental Medicine*, 58(3), 294-298. <https://doi.org/10.1097/JOM.0000000000000624>
- Bond, A. E., & Anestis, M. D. (2023). Understanding capability and suicidal ideation among first responders. *Archives of Suicide Research*, 27(2), 295-306. <https://doi.org/10.1080/13811118.2021.1993397>
- Bonumwezi, J. L., Tramutola, D., Lawrence, J., Kobezak, H. M., & Lowe, S. R. (2022). Posttraumatic stress disorder symptoms, work-related trauma exposure, and substance use in first responders. *Drug and Alcohol Dependence*, 237, 109439. <https://doi.org/10.1016/j.drugalcdep.2022.109439>
- Borghouts, J., Eikey, E., Mark, G., De Leon, C., Schueller, S. M., Schneider, M., ... & Sorkin, D. H. (2021). Barriers to and facilitators of user engagement with digital mental health

- interventions: systematic review. *Journal of Medical Internet Research*, 23(3), e24387. doi: 10.2196/24387
- Brais, N., Setlack, J., Keough, M. T., & Johnson, E. A. (2023). Perceived coworker social support: A protective factor against workplace violence and psychopathologies in paramedics and firefighters. *Journal of Aggression, Maltreatment & Trauma*, 32(3), 346-364. <https://doi.org/10.1080/10926771.2022.2082905>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Braun, V., & Clarke, V. (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, 21(1), 37-47. <https://doi.org/10.1002/capr.12360>
- Braun, V., & Clarke, V. (2023). Is thematic analysis used well in health psychology? A critical review of published research, with recommendations for quality practice and reporting. *Health Psychology Review*, 17(4), 695-718. <https://doi.org/10.1080/17437199.2022.2161594>
- Bryant, R. A. (2022). The nature of posttraumatic stress disorder in treatment-seeking first responders. *European Journal of Psychotraumatology*, 13(1), 2011602. <https://doi.org/10.1080/20008198.2021.2011602>
- Campbell, K. A., Orr, E., Durepos, P., Nguyen, L., Li, L., Whitmore, C., ... & Jack, S. M. (2021). Reflexive Thematic Analysis for Applied Qualitative Health Research. *The Qualitative Report*, 26(6), 2011-2028. <https://doi.org/10.46743/2160-3715/2021.5010>
- Caringi, J., & Pearlman, L. (2009). Living and working self-reflectively to address vicarious trauma. *Treating Complex Traumatic Stress Disorders: An Evidence-Based Guide*; Guilford Press: New York City, NY, USA, 202-222.
- Casas, J. B., & Benuto, L. T. (2022). Work-related traumatic stress spillover in first responder families: A systematic review of the literature. *Psychological Trauma*:

Theory, Research, Practice, and Policy, 14(2), 209.

<https://doi.org/10.1037/tra0001086>

Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in Pharmacy Teaching and Learning*, 10(6), 807-815.

<https://doi.org/10.1016/j.cptl.2018.03.019>

Clarke, N. J., Willis, M. E., Barnes, J. S., Caddick, N., Cromby, J., McDermott, H., & Wiltshire, G. (2015). Analytical pluralism in qualitative research: A meta-study. *Qualitative Research in Psychology*, 12(2), 182-201.

<https://doi.org/10.1080/14780887.2014.948980>

Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, 12(3), 297-298.

Cnapich, E., Rodriguez, S., Schuhmann, B., Couwels, J., Van Hasselt, V., & Blalock, J.

(2022). First responder peer support programs. *FBI Law Enforcement Bulletin*, 1-9.

Cogan, N., Archbold, H., Deakin, K., Griffith, B., Sáez Berruga, I., Smith, S., ... & Flowers, P. (2022). What have we learned about what works in sustaining mental health care and support services during a pandemic? Transferable insights from the COVID-19

response within the NHS Scottish context. *International Journal of Mental Health*,

51(2), 164-188. <https://doi.org/10.1080/00207411.2022.2056386>

Cogan, N., Kirk, A., & Rodriguez, C. G. (2024). The development and protocol for testing a co-created digital intervention (Sentinel) to improve mental wellbeing and help

manage and prevent trauma in first responders. <https://doi.org/10.31234/osf.io/8j32t>

Cohen, K., & Collens, P. (2013). The impact of trauma work on trauma workers: A metasynthesis on vicarious trauma and vicarious posttraumatic growth.

Psychological Trauma: Theory, Research, Practice, and Policy, 5(6), 570–580.

<https://doi.org/10.1037/a0030388>

Crastnopol, M. (2015). *Micro-trauma: A psychoanalytic understanding of cumulative psychic injury*. Routledge.

- Davidson, L., Carter, H., Amlôt, R., Drury, J., Haslam, S. A., Radburn, M., & Stott, C. (2023). A social identity perspective on interoperability in the emergency services: Emergency responders' experiences of multiagency working during the COVID-19 response in the UK. *Journal of Contingencies and Crisis Management*, 31(3), 353-371
- DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: a balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), e000057. <https://doi.org/10.1136/fmch-2018-000057>
- Dempsey, L., Dowling, M., Larkin, P., & Murphy, K. (2016). Sensitive interviewing in qualitative research. *Research in Nursing & Health*, 39(6), 480-490. <https://doi.org/10.1002/nur.21743>
- Dickson-Swift, V., James, E. L., Kippen, S., & Liamput, P. (2007). Doing sensitive research: what challenges do qualitative researchers face? *Qualitative Research*, 7(3), 327-353. <https://doi.org/10.1177/1468794107078515>
- Eaton, G., Wong, G., Tierney, S., Roberts, N., Williams, V., & Mahtani, K. R. (2021). Understanding the role of the paramedic in primary care: a realist review. *BMC medicine*, 19, 1-14.
- Eatough, V., & Smith, J. A. (2017). Interpretative phenomenological analysis. *The Sage Handbook of Qualitative Research in Psychology*, 193-209.
- Feldman, T. R., Carlson, C. L., Rice, L. K., Kruse, M. I., Beevers, C. G., Telch, M. J., & Josephs, R. A. (2021). Factors predicting the development of psychopathology among first responders: A prospective, longitudinal study. *Psychological Trauma: Theory, Research, Practice, and Policy*, 13(1), 75. <https://doi.org/10.1037/tra0000957>
- Finlay, L. (2012). Five lenses for the reflexive interviewer. *The SAGE handbook of interview research: The complexity of the craft*, 317-333.
- Froggett, L., & Hollway, W. (2010). Psychosocial research analysis and scenic understanding. *Psychoanalysis, Culture & Society*, 15, 281-301. <https://doi.org/10.1057/pcs.2010.18>

- Gilmartin, K. M. (2002). Emotional survival for law enforcement. *Tucson, AZ: ES*.
- Giorgi, A. (2011). IPA and science: A response to Jonathan Smith. *Journal of Phenomenological Psychology, 42*(2), 195-216.
- Goelitz, A. (2020). *From trauma to healing: A social worker's guide to working with survivors*. Routledge.
- Greinacher, A., Derezza-Greeven, C., Herzog, W., & Nikendei, C. (2019). Secondary traumatization in first responders: a systematic review. *European Journal of Psychotraumatology, 10*(1), 1562840.
<https://doi.org/10.1080/20008198.2018.1562840>
- Griffith, B., Archbold, H., Sáez Berruga, I., Smith, S., Deakin, K., Cogan, N., Tanner, G., & Flowers, P. (2023). Frontline experiences of delivering remote mental health supports during the COVID-19 pandemic in Scotland: innovations, insights and lessons learned from mental health workers. *Psychology, Health and Medicine, 28*(4), 964-979. <https://doi.org/10.1080/13548506.2022.2148698>
- Hafford-Letchfield, T., Hanna, J., Grant, E., Ryder-Davies, L., Cogan, N., Goodman, J., ... & Martin, S. (2022). "It's a Living Experience": Bereavement by Suicide in Later Life. *International Journal of Environmental Research and Public Health, 19*(12), 7217.
<https://doi.org/10.3390/ijerph19127217>
- Haugen, P. T., McCrillis, A. M., Smid, G.E., & Nijdam, M. J. (2017). Mental health stigma and barriers to mental health care for first responders: A systematic review and meta-analysis. *Journal of Psychiatric Research, 94*, 218-229.
<https://doi.org/10.1016/j.jpsychires.2017.08.001>
- Hinton, E., Steel, Z., Hilbrink, D., & Berle, D. (2022). Anger and predictors of drop-out from PTSD treatment of veterans and first responders. *Behavioural and Cognitive Psychotherapy, 50*(2), 237-251. <https://doi.org/10.1017/S1352465821000382>
- Hoegh, J., Rice, G., Shetty, S., Ure, A., Cogan, N., & Peddie, N. (2024). Health and social care professionals' experience of psychological safety within their occupational

- setting: a thematic synthesis scoping review protocol. *COJ Nursing & Healthcare*, 8(5), 915-920. <https://doi.org/10.31031/COJNH.2024.08.000700>
- Hourani, L. L., Davila, M. I., Morgan, J., Meleth, S., Ramirez, D., Lewis, G., ... & Lewis, A. (2020). Mental health, stress, and resilience correlates of heart rate variability among military reservists, guardsmen, and first responders. *Physiology & Behavior*, 214, 112734. <https://doi.org/10.1016/j.physbeh.2019.112734>
- Isobel, S. (2021). Trauma-informed qualitative research: Some methodological and practical considerations. *International Journal of Mental Health Nursing*, 30, 1456-1469. <https://doi.org/10.1111/inm.12914>
- Ivey, G. (2023). Interpreting hidden meaning in qualitative research interview data: Opportunities and challenges. *Qualitative Research in Psychology*, 20(1), 21-51. <https://doi.org/10.1080/14780887.2022.2067509>
- Johnson, C. C., Vega, L., Kohalmi, A. L., Roth, J. C., Howell, B. R., & Van Hasselt, V. B. (2020). Enhancing mental health treatment for the firefighter population: Understanding fire culture, treatment barriers, practice implications, and research directions. *Professional Psychology: Research and Practice*, 51(3), 304–311. <https://doi.org/10.1037/pro0000266>
- Jones, S. (2017). Describing the mental health profile of first responders: A systematic review. *Journal of the American Psychiatric Nurses Association*, 23(3), 200-214.
- Jones, S., Agud, K., & McSweeney, J. (2020). Barriers and facilitators to seeking mental health care among first responders :“removing the darkness”. *Journal of the American Psychiatric Nurses Association*, 26(1), 43-54.
- Jones, S., Nagel, C., McSweeney, J., & Curran, G. (2018). Prevalence and correlates of psychiatric symptoms among first responders in a Southern State. *Archives of psychiatric nursing*, 32(6), 828-835.
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. *Medical teacher*, 42(8), 846–854. <https://doi.org/10.1080/0142159X.2020.1755030>

- Kim, J., Aggarwal, A., Maloney, S., & Tibbits, M. (2021). Organizational assessment to implement trauma-informed care for first responders, child welfare providers, and healthcare professionals. *Professional Psychology: Research and Practice*, 52(6), 569.
- Kirby, K., Moreland, S., & Pollard, J. (2016). The impact of working shifts: exploring the views of UK paramedics. *Journal of Paramedic Practice*, 8(5), 252-257.
<https://doi.org/10.12968/jpar.2016.8.5.252>
- Kleim, B., & Westphal, M. (2011). Mental health in first responders: A review and recommendation for prevention and intervention strategies. *Traumatology*, 17(4), 17-24. <https://doi.org/10.1177/1534765611429079>
- Lanza, A., Roysircar, G., & Rodgers, S. (2018). First responder mental healthcare: Evidence-based prevention, postvention, and treatment. *Professional Psychology: Research and Practice*, 49(3), 193. <https://doi.org/10.1177/1534765611429079>
- Legerski, J. P., & Bunnell, S. L. (2010). The risks, benefits, and ethics of trauma-focused research participation. *Ethics & Behavior*, 20(6), 429-442.
<https://doi.org/10.1080/10508422.2010.521443>
- Levitt, H. M., Bamberg, M., Creswell, J. W., Frost, D. M., Josselson, R., & Suárez-Orozco, C. (2018). Journal article reporting standards for qualitative primary, qualitative meta-analytic, and mixed methods research in psychology: The APA Publications and Communications Board task force report. *American Psychologist*, 73(1), 26–46.
<https://doi.org/10.1037/amp0000151>
- Lumvero (2020). *NVivo* (Version 13). [Computer Software]
<https://lumivero.com/products/nvivo/>
- MacIntyre, G., Cogan, N., Stewart, A., Quinn, N., Rowe, M., & O'Connell, M. (2018). Understanding citizenship within a health and social care context in Scotland using community based participatory research methods. *SAGE Research Methods Cases*.
<https://doi.org/10.4135/9781526484918>

- Maher, C., Hadfield, M., Hutchings, M., & De Eyto, A. (2018). Ensuring rigor in qualitative data analysis: A design research approach to coding combining NVivo with traditional material methods. *International Journal of Qualitative Methods*, 17(1), 1609406918786362. <https://doi.org/10.1177/1609406918786362>
- Marvin, G., Schram, B., Orr, R., & Canetti, E. F. (2023). Occupation-Induced Fatigue and Impacts on Emergency First Responders: A Systematic Review. *International Journal of Environmental Research and Public Health*, 20(22), 7055. <https://doi.org/10.3390/ijerph20227055>
- Mausz, J., Donnelly, E. A., Moll, S., Harms, S., & McConnell, M. (2022). Role Identity, Dissonance, and Distress among Paramedics. *International Journal of Environmental Research and Public Health*, 19(4), 2115. <https://doi.org/10.3390/ijerph19042115>
- Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research*, 25(9), 1212-1222. <https://doi.org/10.1177/1049732315588501>
- Morton, L., Cogan, N., Kolacz, J., Calderwood, C., Nikolic, M., Bacon, T., ... & Porges, S. W. (2022). A new measure of feeling safe: Developing psychometric properties of the Neuroception of Psychological Safety Scale (NPSS). *Psychological Trauma: Theory, Research, Practice, and Policy*. <https://doi.org/10.1037/tra0001313>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16(1). <https://doi.org/10.1177/1609406917733847>
- Nunavath, V., Prinz, A., & Comes, T. (2016). Identifying first responders information needs: Supporting search and rescue operations for fire emergency response. *International Journal of Information Systems for Crisis Response and Management (IJISCRAM)*, 8(1), 25-46. <https://doi.org/10.4018/IJISCRAM.2016010102>
- Onwuegbuzie, A. J., & Byers, V. T. (2014). An exemplar for combining the collection, analysis, and interpretations of verbal and nonverbal data in qualitative research. *International Journal of Education*, 6(1), 183. <https://doi.org/10.5296/ije.v6i1.4399>

- Petrie, K., Milligan-Saville, J., Gayed, A., Deady, M., Phelps, A., Dell, L., ... & Harvey, S. B. (2018). Prevalence of PTSD and common mental disorders amongst ambulance personnel: a systematic review and meta-analysis. *Social Psychiatry and Psychiatric Epidemiology*, 53, 897-909. <https://doi.org/10.1007/s00127-018-1539-5>
- Pietkiewicz, I., & Smith, J. A. (2014). A practical guide to using interpretative phenomenological analysis in qualitative research psychology. *Psychological Journal*, 20(1), 7-14. <https://doi.org/10.14691/CPJ.20.1.7>
- Pietrzak, R. H., Feder, A., Singh, R., Schechter, C. B., Bromet, E. J., Katz, C. L., ... & Southwick, S. M. (2014). Trajectories of PTSD risk and resilience in World Trade Center responders: an 8-year prospective cohort study. *Psychological Medicine*, 44(1), 205-219. <https://doi.org/10.1017/S0033291713000597>
- Prioux, C., Marillier, M., Vuillermoz, C., Vandentorren, S., Rabet, G., Petitclerc, M., ... & Motreff, Y. (2023). PTSD and partial PTSD among first responders one and five years after the Paris terror attacks in November 2015. *International Journal of Environmental Research and Public Health*, 20(5), 4160. <https://doi.org/10.3390/ijerph20054160>
- Reffi, A. N., Kalmbach, D. A., Cheng, P., Tappenden, P., Valentine, J., Drake, C. L., ... & Lilly, M. M. (2023). Fear of sleep in first responders: associations with trauma types, psychopathology, and sleep disturbances. *Sleep Advances*, 4(1), zpad053. <https://doi.org/10.1093/sleepadvances/zpad053>
- Regehr, C., Goldberg, G., & Hughes, J. (2002). Exposure to human tragedy, empathy, and trauma in ambulance paramedics. *American Journal of Orthopsychiatry*, 72(4), 505-513.
- Rennebohm, S. B., Dolezal, M. L., Bentley, J. A., Edwards-Stewart, A., Thoburn, J. W., & Holguin, J. (2023). The moderating effect of coping behaviors on posttraumatic stress and first responder romantic relationships. *Couple and Family Psychology: Research and Practice*, 12(1), 1. <https://doi.org/10.1037/cfp0000165>

- Richins, M. T., Gauntlett, L., Tehrani, N., Hesketh, I., Weston, D., Carter, H., & Amlôt, R. (2020). Early post-trauma interventions in organizations: a scoping review. *Frontiers in Psychology, 11*, 515559. <https://doi.org/10.3389/fpsyg.2020.01176>
- Roberts, K., Dowell, A., & Nie, J. B. (2019). Attempting rigour and replicability in thematic analysis of qualitative research data; a case study of codebook development. *BMC Medical Research Methodology, 19*, 1-8. <https://doi.org/10.1186/s12874-019-0707-y>
- Rodrigues, S., Mercier, J. M., McCall, A., Nannarone, M., & Hosseiny, F. (2023). 'Against everything that got you into the job': experiences of potentially morally injurious events among Canadian public safety personnel. *European Journal of Psychotraumatology, 14*(2), 2205332. <https://doi.org/10.1080/20008066.2023.2205332>
- Shea, S. C., & Barney, C. (2015). Teaching clinical interviewing skills using role-playing: conveying empathy to performing a suicide assessment: a primer for individual role-playing and scripted group role-playing. *Psychiatric Clinics, 38*(1), 147-183. <https://doi.org/10.1016/j.psc.2014.10.001>
- Smith, E., Dean, G., & Holmes, L. (2021). Supporting the mental health and well-being of first responders from career to retirement: A scoping review. *Prehospital and Disaster Medicine, 36*(4), 475-480. <https://doi.org/10.1017/S1049023X21000431>
- Smith, J. A., Larkin, M., & Flowers, P. (2021). *Interpretative phenomenological analysis: Theory, method and research*. Sage
- Spiers, J., & Riley, R. (2019). Analysing one dataset with two qualitative methods: The distress of general practitioners, a thematic and interpretative phenomenological analysis. *Qualitative Research in Psychology, 16*(2), 276-290. <https://doi.org/10.1080/14780887.2018.1543099>
- Surgenor, L. J., Snell, D. L., & Dorahy, M. (2020). Factors associated with psychiatric morbidity, post-traumatic stress disorder and post-traumatic growth in paramedic first responders: the role of core beliefs. *Australasian Journal of Paramedicine, 17*, 1-8. <https://doi.org/10.33151/ajp.17.727>

- Tamrakar, T., Langtry, J., Shevlin, M., Reid, T., & Murphy, J. (2020). Profiling and predicting help-seeking behaviour among trauma-exposed UK firefighters. *European Journal of Psychotraumatology*, 11(1), 1721144.
<https://doi.org/10.1080/20008198.2020.1721144>
- Tjin, A., Traynor, A., Doyle, B., Mulhall, C., Eppich, W., & O'Toole, M. (2022). Turning to 'Trusted Others': A Narrative Review of Providing Social Support to First Responders. *International Journal of Environmental Research and Public Health*, 19(24), 16492. <https://doi.org/10.3390/ijerph192416492>
- Tomaszewski, L. E., Zarestky, J., & Gonzalez, E. (2020). Planning Qualitative Research: Design and Decision Making for New Researchers. *International Journal of Qualitative Methods*, 19. <https://doi.org/10.1177/1609406920967174>
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19(6), 349-357.
<https://doi.org/10.1093/intqhc/mzm042>
- Vaughn, L. M., & Jacquez, F. (2020). Participatory research methods—choice points in the research process. *Journal of Participatory Research Methods*, 1(1).
<https://doi.org/10.35844/001c.13244>
- Whitworth, J., Galusha, J., Carbajal, J., Ponder, W. N., & Schuman, D. L. (2023). Affective depression mediates PTSD to suicide in a sample of treatment-seeking first responders. *Journal of Occupational and Environmental Medicine*, 65(3), 249-254.
<https://doi.org/10.1097/JOM.0000000000002724>
- Zolnikov, T. R., & Furio, F. (2020). Stigma on first responders during COVID-19. *Stigma and Health*, 5 (4), 375–379. <https://doi.org/10.1037/sah0000270>