Doctoral Thesis

Submitted in partial fulfilment of the Lancaster University Doctorate in Clinical Psychology

Psychological Factors in the Wellbeing of First Responder Populations

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Thesis Abstract

The thesis comprises a literature review on dispositional mindfulness and wellbeing in first responders, an empirical paper on emotional intelligence (EI), self-compassion and wellbeing in ambulance staff, and a critical appraisal of key issues in the empirical paper.

The first paper is a systematic review of 27 quantitative studies, exploring the relationship between dispositional mindfulness and wellbeing in first responders. Four databases were searched: PsycInfo, Medline, CINAHL and EmCare. Dispositional mindfulness was associated with fewer negative psychological and physical wellbeing outcomes and greater positive wellbeing outcomes. Dispositional mindfulness attenuated the negative effect of mental health symptoms and stress on wellbeing. Longitudinal research would help determine causality in these relationships.

The second paper describes a research project exploring the relationship between EI and self-compassion (self-coldness and self-kindness), professional quality of life (compassion satisfaction – CS; and compassion fatigue - CF) and psychological wellbeing in ambulance staff. Despite ambulance staff experiencing increased risk of negative wellbeing outcomes, no research has been conducted into the relative contribution of EI and self-compassion towards their wellbeing. 146 ambulance staff completed an online survey containing measures of EI, self-compassion, CS and CF, and psychological wellbeing. CF correlated negatively with EI and self-kindness, and positively with self-coldness; both CS and psychological wellbeing correlated positively with EI and self-kindness and negatively with self-coldness. Hierarchical multiple regression analyses found that greater self-coldness and years of experience predicted greater CF; greater EI and fewer years of experience predicted greater CS; and greater EI and lower self-coldness predicted greater psychological

wellbeing. The findings indicate that interventions to enhance EI and reduce self-coldness could support ambulance staff wellbeing.

The third paper critically appraises the research project, considering the conceptualisation and measurement of key variables: self-compassion, CF and EI. It then addresses limitations of focusing on individual factors in ambulance staff wellbeing.

Declaration

This thesis represents work undertaken for the Doctorate in Clinical Psychology course at Lancaster University. The work presented is the author's own, except where otherwise stated and has not been submitted for any other academic award.

Beth Parker

1st March 2023

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First, I would like to thank everyone who participated in the research project for giving their time, particularly during such a challenging year. I would also like to thank Dr Fiona Eccles for all your support since joining as my research supervisor. Your knowledge, experience and containing presence have been invaluable in helping me get through the project. I am also very grateful to my field supervisor, Dr Amy Ashton, for your advice and support with the draft reads, and for being an inspiring model of women in leadership. A huge thank you to my family, especially mum, for putting up with me and supporting me throughout this process – it wouldn't have happened without you. Finally, to my friends and colleagues from our cohort, it has been a privilege sharing this experience with you – thank you for being cloth monkeys when needed.

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Section One: Literature Review

The Relationship Between Mindfulness and Wellbeing in First Responders: A Systematic Review

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Abstract

Objectives

The aim of this review was to explore the relationship between dispositional mindfulness (DM) and wellbeing outcomes in first responder populations, including police, fire, and emergency medical personnel.

Methods

A systematic review was conducted, incorporating a search of four academic databases (PsycInfo, Medline, CINAHL and EmCare). Following duplicate removal, screening and forward and backward searches, 27 papers reporting findings from 22 quantitative studies were identified for the review. Quality appraisal of included studies was completed, with a subsection of these rated by a peer to increase reliability. Data were extracted, then analysed using narrative synthesis.

Results

The findings suggest that greater DM is related to lower levels of negative psychological and physical wellbeing outcomes and higher levels of positive wellbeing outcomes in first responders. Greater DM also attenuated the negative effect of mental health symptoms and stress on their wellbeing. The results indicate that DM may benefit first responders' wellbeing through its influence on using more adaptive coping mechanisms and perceiving oneself as having greater coping resources and fewer stressors. However, the lack of longitudinal research limits conclusions about the direction of causation in these relationships.

Conclusions

DM appears to be related to fewer negative, and greater positive, wellbeing outcomes in first responders. Further research exploring positive wellbeing outcomes, the

long-term impact of DM on wellbeing, and under-represented first responder populations would add to the current evidence base.

Keywords

Dispositional mindfulness; first responders; wellbeing; mental health; trauma

While there is no agreed definition of the term ‘first responder’, it tends to refer to staff who respond to emergency situations such as police, fire, and emergency medical personnel (Bricker et al., 2013). First responders are frequently exposed to potentially traumatic events such as death, threats and aggression (Jahnke et al., 2016; Lawn et al., 2020; Lee et al., 2017; Reid et al., 2022) at a higher rate than the general population (Skeffington et al., 2017), putting them at risk of negative wellbeing outcomes. For example, post-traumatic stress disorder (PTSD) prevalence rates are reportedly higher in first responders than the general population (Petrie et al., 2018; Soravia et al., 2021; Syed et al., 2020; Tomaka et al., 2017), with systematic reviews suggesting prevalence of around 10%, though there is high heterogeneity in reported rates (Berger et al., 2012). First responders also report higher rates of anxiety and depression (Petrie et al., 2018; Reid et al., 2022; Syed et al., 2020) than the general population (World Health Organisation [WHO], 2017) and many report drinking alcohol at hazardous levels (Syed et al., 2020; Tomaka et al., 2017), suicidal thoughts and behaviours (Stanley et al., 2016) and sleep disturbances (Jones, 2017). These negative wellbeing outcomes can affect first responders’ occupational functioning, in terms of burnout, secondary traumatic stress (STS), and compassion fatigue (Burnett et al., 2019; Kula, 2017; Lawn et al., 2020). This can lead to increased levels of long-term sickness absence (Borritz et al., 2010), which may increase economic burden on services and pressure on other staff members. Social functioning is also affected, with ambulance staff and firefighters in qualitative studies reporting a negative impact of work on personal relationships (Lawn et al., 2020), with conflict within personal relationships caused by desensitisation, cynicism and irritability (Jahnke et al., 2016). The above literature covers a range of first responder professions and evidence gathered from different

countries, indicating that first responders across professions and locations may be at increased risk of negative wellbeing outcomes.

In an attempt to understand these negative wellbeing outcomes, individual, occupational, and organisational risk factors have been explored in research. Individual factors related to increased PTSD symptoms include higher self-efficacy, a sense of inadequacy and 'maladaptive' coping strategies (Reid et al., 2022; Skeffington et al., 2017; Soravia et al., 2021; Syed et al., 2020). Unhelpful coping strategies identified include avoidance, self-distraction, denial, and self-blame (Reid et al., 2022; Skeffington et al., 2017; Soravia et al., 2021; Syed et al., 2020). 'Compartmentalising' emotions was shown to be helpful initially, but unhelpful long-term (Jahnke et al., 2016; Lawn et al., 2020). Occupational risk factors are those associated with the nature of the work, such as exposure to traumatic events, death, distress and the working environment. Traumatic events have a cumulative effect on post-trauma symptoms in first responders; events that cause a strong emotional reaction, such as serious injury of a colleague, death of an infant, or serious threat to the self are particularly linked to poorer wellbeing (Lawn et al., 2020; Lewis-Schroeder et al., 2018). Factors such as high workload, shift work, lack of breaks, hostile work environment, and perceived lack of reward (Burnett et al., 2019; Lawn et al., 2020; Lewis-Schroeder et al., 2018; Syed et al., 2020) can also lead to burnout and perceived stress, contributing to poorer wellbeing.

Organisational factors can also negatively affect first responder wellbeing, particularly lack of support from managers (Kula, 2017; Lawn et al., 2020), as well as lack of social support at work, frequent policy changes, and lack of communication within the organisation (Lewis-Schroeder et al., 2018). Workplace culture and stigma may discourage first responders from seeking help when experiencing distress (Lewis-Schroeder et al.,

2018), due to concerns about the negative impact on their career and feeling judged (Haugen et al., 2017; Lawn et al., 2020). Thus, occupational and organisational factors, many of which may feel outside of their immediate control, as well as individual coping strategies, put first responders at risk of negative wellbeing outcomes.

Alongside these negative effects, first responders report positive aspects of the work, such as a sense of purpose, identity, and meaning which may protect against suicidal thoughts and lead to increased resilience, life satisfaction, and personal growth (Lawn et al., 2020; Reid et al., 2022; Stanley et al., 2016). Social support can help to protect against negative outcomes such as depression (Reti et al., 2022), PTSD symptoms (Syed et al., 2020), and suicidal thoughts (Stanley et al., 2016). Individual coping strategies such as repeatedly thinking about an event until it is no longer distressing and using humour with colleagues (Jahnke et al., 2016; Tomaka et al., 2017) can also be helpful. Thus, while first responders' work presents significant challenges, there are factors which support their wellbeing.

Mindfulness is an individual factor that has been related to wellbeing in other populations. The concept of mindfulness originated in Buddhist philosophy but has been incorporated into Western ideas of wellbeing, most prominently introduced by Jon Kabat-Zinn who defined mindfulness as "paying attention in a particular way: on purpose, in the present moment, and non-judgementally" (Kabat-Zinn, 1994, p.4). Mindfulness can be described either as a trait or the state induced by practising mindfulness. Definitions of trait or dispositional mindfulness (DM) vary according to whether DM is viewed as a unitary (Brown & Ryan, 2003) or multi-faceted construct (Baer et al., 2006). Multi-faceted definitions tend to include up to five facets including: Observing - noticing internal and external experiences; Describing - labelling experiences; Acting with awareness - noticing behaviour rather than acting on 'autopilot'; Non-judging - accepting experiences without

judgement or evaluation; and Non-reacting - allowing thoughts and feelings to come and go without becoming caught up in them or pushing them away (Baer et al., 2006). Across definitions, common factors of DM include awareness of present-moment experience and taking a non-judgemental, non-evaluative approach to that experience (Brown et al., 2007; Karl & Fischer, 2022). Individuals differ in their tendency to be mindfully aware of their experience, and an individual's mindful awareness fluctuates due to a variety of factors (Brown & Ryan, 2003).

Research into the association between DM and wellbeing has increased in the last 20 years (Karl & Fischer, 2022). Those with greater DM tend to report positive outcomes such as greater life satisfaction, self-esteem, empathy, optimism, confidence, pleasant affect, and engagement in positive health behaviours, and lower levels of depression, rumination, anxiety, emotion regulation difficulties, stress, eating difficulties, and PTSD symptoms (e.g. Carpenter et al., 2019; Harper et al., 2022; Keng et al., 2011; Mesmer-Magnus et al., 2017; Randall et al., 2015; Sala et al., 2020; Tomlinson et al., 2018). This indicates that people with greater DM experience better psychological and physical wellbeing than those with lower DM. Higher self-reported DM was related to lower amygdala activation in response to emotionally threatening stimuli during fMRI brain scanning (Creswell et al., 2007), indicating that those with greater DM are less reactive to threat at a neurological level. Further, systematic reviews indicate that mindfulness training reduces symptoms of depression, anxiety, and trauma responses and increases quality of life (Hopwood & Schutte, 2017; Quaglia et al., 2016; Taylor et al., 2020). Increases in mindfulness mediated the positive effect of such training on wellbeing (Gu et al., 2015), suggesting that increases in mindfulness improve wellbeing.

With regards to mindfulness facets, acting with awareness and non-judging tend to be the most strongly associated with wellbeing, being related to better psychological wellbeing (Tomlinson et al., 2018), fewer depression, anxiety (Carpenter et al., 2019), and PTSD symptoms (Reffi et al., 2019), and increased engagement in health behaviours (Sala et al., 2020). Observing is the least consistently related to wellbeing, being unrelated to depression, anxiety (Carpenter et al., 2019), or PTSD symptoms (Harper et al., 2022), and having a mixed relationship with engagement in health behaviours (Sala et al., 2020).

Mindfulness is hypothesised to improve wellbeing as it entails being attuned to sensory experiences without judging them (Brown & Ryan, 2003), thus individuals with high DM may gain insight and awareness into their internal experiences. This may reduce the likelihood of engaging in rumination and self-judgement which would lower their mood, or unhelpful avoidance of difficult experiences, thus allowing more effective emotion regulation (Brown et al., 2007; Grabovac et al., 2011). In one study, people with higher DM reported a lower tendency to become caught up in unhelpful thinking processes or use avoidant coping strategies and used more adaptive coping strategies than those with lower DM, suggesting these as possible pathways by which mindfulness improves wellbeing (Tomlinson et al., 2018).

The effect of mindfulness on workplace wellbeing and performance has also been explored in the literature. Mindfulness has been theorised to encourage positive interpersonal relationships, increase resilience, and reduce perceived stress at work (Glomb et al., 2011; Hülsheger et al., 2013). In a meta-analysis of studies with working adults, greater DM was associated with improved self-efficacy, job satisfaction, and interpersonal relationships, and lower perceived stress, unpleasant emotions, and burnout (Mesmer-Magnus et al., 2017). Mindfulness also predicted work performance above that which could

be explained by work effort (Mesmer-Magnus et al., 2017), suggesting that mindfulness may improve work performance and wellbeing and may be particularly helpful for those in complex and emotionally challenging occupations (Glomb et al., 2011), such as first responders.

Research has found a positive association between DM and wellbeing in people in high-stress occupations such as the military and healthcare. Greater DM was associated with lower depression, anxiety, rumination, harmful substance use, suicidal ideation, and trauma symptoms in USA military personnel (Barr et al., 2019; Bravo et al., 2018; Kachadourian et al., 2021). Further, increases in mindfulness following a Cognitive Processing Therapy intervention predicted reductions in PTSD and depression symptoms in veterans (Boden et al., 2012), while a study with 198 soldiers found that higher baseline mindfulness predicted lower distress and anxiety 15 months post-deployment, even when controlling for baseline distress and anxiety, combat zone deployments, and combat experiences (Call et al., 2015). This indicates that greater DM may buffer staff in high-risk occupations against the negative effects of occupational trauma. Higher DM was also associated with lower levels of depression, anxiety, and burnout and greater mental health, sense of personal accomplishment, and wellbeing in emergency department or intensive care nurses in Switzerland, Italy and China (Lu et al., 2019; Salvarani et al., 2019; Westphal et al., 2015). In UK healthcare staff, greater DM was related to less emotional exhaustion, weariness, and reports of feeling their practice was unsafe (Prudenzi et al., 2022). A meta-analysis found that the negative association between DM and PTSD symptoms was stronger for individuals in high-stress occupations than other populations (Harper et al., 2022), suggesting that DM may be even more important for them than the general population.

The above research indicates that DM is positively related to wellbeing for those in high-stress occupations. However, no reviews have explored this relationship in first responders. Harper et al. (2022)'s review considered the effect of DM on wellbeing for those in high-stress occupations, but the only first responders included were firefighters and the only wellbeing outcome considered was PTSD symptoms. Given the evidence indicating that first responders from a range of occupations may experience negative wellbeing outcomes, this review will explore the relationship between DM and wellbeing in first responders, and includes a range of positive and negative wellbeing outcomes. Emergency services are increasingly aware of the importance of staff wellbeing and have planned to adopt strategies to support their employees' mental health (Mind, 2021). Therefore, if mindfulness is beneficial for first responders' wellbeing, such techniques could be incorporated into employee support programmes. Therefore, this review aims to answer the question: What is the relationship between mindfulness and wellbeing in first responders?

Methods

The review protocol was published in the PROSPERO registry before full commencement (CRD42022332536).

Inclusion and Exclusion Criteria

Papers exploring the relationship between mindfulness and wellbeing in first responders were sought for the review. Studies were included if they:

- Were peer-reviewed papers published in English.
- Quantitatively measured the relationship between mindfulness and wellbeing, using a validated measure of mindfulness and at least one validated measure of wellbeing. A broad definition of wellbeing has been used in this review, including positive (e.g. life satisfaction, compassion satisfaction, subjective psychological wellbeing) and

negative (e.g. mental health symptoms, stress, suicidal thoughts) psychological wellbeing outcomes and physical wellbeing outcomes (e.g. pain, health symptoms),

- Focused on one or more first responder occupations including ambulance staff, firefighters or police personnel.
- Focused on adult populations, aged 18 or over.

Reasons for exclusion were:

- Intervention studies without reported baseline correlations.
- Did not focus mainly on currently serving first responders (e.g. studies solely including retired first responders were excluded).

There was no restriction on publication date or participant demographics other than occupation. Data from intervention studies were included only if they reported associations between mindfulness and wellbeing measures. Papers on trainee first responders were retained, as trainees are as likely to report having experienced certain potentially traumatic events as experienced professionals (Regehr et al., 2003) and report experiencing similar levels of negative outcomes such as PTSD, depression and alcohol use (Berger et al., 2012; Jones, 2017).

Search Strategy

The search strategy was developed in consultation with an academic librarian. The systematic search was conducted on 29th April 2022 using four databases: PsycInfo, Medline, CINAHL, and EmCare. The two concepts of “mindfulness” and “first responders” were searched for, using both subject headings and free text. The subject heading of “mindfulness” was used in each database. Recommended subject headings for first responders were used for each database: “emergency personnel” in PsycInfo; “emergency responders” in Medline; “first responders” in EmCare. In CINAHL, there was no subject

heading for first responders as a group, so relevant occupational groups were selected from the list of professions: “firefighters”, “emergency medical technicians”, and “police”.

The following free text terms were used in title and abstract fields in all databases: "first responder*" OR first-responder* OR firstresponder* OR paramedic* OR firefighter* OR fire-fighter* OR "fire fighter*" OR police* OR “law enforcement” OR “emergency medical technician*” OR EMT OR “relief worker*” OR “emergency medical service*” OR “emergency service” OR ((fire OR police OR emergenc* OR ambulance OR rescue) N3 (person* OR staff* OR responder* OR fighter* OR man OR men)); and mindful* to capture mindfulness.

No wellbeing terms were used in the search in order to capture as wide a range of wellbeing outcomes as possible and ensure no outcomes were excluded. The search strategy was validated by testing whether it identified six studies known to be relevant to the topic. All six studies were identified by the search strategy.

The searches resulted in 542 papers. Following removal of 80 duplicates, titles and abstracts of all remaining studies were screened for eligibility, with a further 396 papers removed at this stage. The full texts of the resulting 66 papers were read to determine eligibility for inclusion, resulting in 26 papers. Next, forward and backward searches were conducted to identify additional papers by screening reference lists and citing articles of included papers for further relevant papers. The selection process resulted in a total of 27 papers to be included in the review. See Figure 1 for the full search strategy.

[Figure 1 here]

Data Extraction and Analysis

Data extracted from each paper included: sample size, age, profession and gender, country the study was conducted in, study design, data analysis methods, mindfulness

measure used, wellbeing outcome measures, and main findings. Effect sizes were mainly determined via correlation coefficients reported in the studies.

The findings of the included studies were analysed using a narrative synthesis to integrate and discuss the evidence. As the studies were heterogenous in both design and wellbeing outcomes measured, a meta-analysis was not conducted. The box-score approach was used to visually display significance of associations between DM and outcome measures.

Quality Assessment

Due to the heterogeneity of study designs, the Quality Assessment for Diverse Studies (QuADS; Harrison et al., 2021) tool was used to assess the methodological quality of studies included in the review. This tool consists of 13 items related to methodological issues such as theoretical underpinning, appropriateness of study design, sample selection and data collection and analysis. Studies were scored 0-3 on each item and assigned an overall score of methodological quality by summing the item scores. Possible total scores range from 0 to 39. Five papers were rated by a peer to ensure reliability of ratings. Discrepancies were overcome through discussion to achieve a consensus on the final score.

Results

Study Characteristics

The above search strategy identified 27 papers on 23 studies, with 6,276 participants. Firefighters had the highest representation, 4,324 participants from 14 papers on 11 studies, followed by police personnel, 1,295 participants from 10 papers on nine studies. Two studies were on mixed first responder groups, with 418 participants. One study was solely on ambulance staff, comprising 239 participants. Participants' mean ages ranged from 21.3 to 45.6 years, where these were given (22 studies). Males made up 45-100% of

participants. While this may reflect higher proportions of males working in first responder professions, it is likely that males are over-represented, given that 12 of the study samples were over 90% male.

Most studies came from the USA (*N* = 15), followed by China (*N* = 4), with two each from Australia and Italy, and one each from Austria, Canada, Korea and Spain.

Of the studies identified, 17 had a cross-sectional design, four used longitudinal methods, five used baseline data from randomised controlled trials (RCTs; *N* = 3) or uncontrolled intervention studies (*N* = 2) and one was a cohort study. Regarding analysis methods, 23 papers used correlation, with 17 also including regression and 18 utilising more complex methods.

An overview of the included papers can be found in Table 1.

[Table 1 here]

Mindfulness Measures

The papers included in the review used four different measures of DM. The most widely used was the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), in 13 studies. This was followed by the Five-Factor Mindfulness Questionnaire (FFMQ; Baer et al., 2006), in 11 studies, which measures mindfulness facets of 'Observing' experiences, 'Describing' internal experiences, 'Acting with awareness' of the present, 'Non-judgement' of internal experiences and 'Non-reactivity' to internal experiences. The Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004) was used in two studies and the Freiburg Mindfulness Inventory (FMI; Walach et al., 2006) was used in one.

Summary of Quality Appraisal

There was variability in the quality of included studies (see Appendix A). Scores ranged from 19 to 33 out of a possible 39 points on the QuADS tool. Scores of 26 or above

were given to 19 studies, reflecting an average of at least two out of three on each criterion, though the QuADS tool does not use cut-off scores for study quality. Most papers gave a clear theoretical underpinning to the study, stated their aims in detail and provided details on the research setting and sample. Study designs, data collection methods and data analysis were often described clearly and were appropriate to the study aims. However, justification of sample sizes and measures were rarely reported, with a lack of reported stakeholder input into the design or conduct of most studies.

Summary of Main Findings

A summary of the studies' main findings can be found in Table 2.

[Table 2 here]

Findings which used correlation and regression analyses, and one which used ANOVAs, to explore relationships between DM and wellbeing outcomes have been summarised across six categories: trauma responses, negative psychological wellbeing outcomes, positive psychological wellbeing outcomes, physical wellbeing, coping, and occupational experience. Trauma responses and negative wellbeing outcomes were the most frequently studied (see Table 3 for box score review), with 15 studies each. Positive psychological wellbeing outcomes, coping and occupational experience were explored in six studies each, and physical wellbeing in five.

Studies using structural equation modelling, mediation analyses and moderation analyses to explore the relationship between DM and wellbeing are then covered.

[Table 3 here]

Trauma Responses

The association between DM and PTSD symptoms was explored in 10 studies, and STS in three studies. Significant negative associations were found in each study. A medium

to large effect size regarding PTSD symptoms was found for firefighters and first responders (Chen et al., 2019; LeBeaut et al., 2022; McDonald et al., 2022; Smith et al., 2011; Stanley et al., 2019; Yu et al., 2020), and a small effect size for trainee police (Chopko et al., 2022). The smaller effect size may be due to participants being trainees rather than experienced first responders, as Chopko et al. (2022) theorized that police officers use more avoidance (a component of PTSD symptoms) over time in their career. Effect sizes for STS were medium to large in firefighters and first responders (Argentero et al, 2015; McDonald et al., 2022; Setti & Argentero, 2014). Mindfulness facets of describing, acting with awareness and non-judgement were negatively related to PTSD symptoms, whereas observing had a small positive relationship, and results for non-reactivity were mixed, with either a negligible (r<0.1) or small negative relationship (Chopko et al., 2022; Chopko & Schwartz, 2013; LeBeaut et al., 2022; Stanley et al., 2019). In regression analyses, greater DM significantly predicted lower PTSD severity and STS across professional groups, controlling for demographic variables (Chopko et al., 2022; Chopko & Schwartz, 2013; McDonald et al., 2022; Setti & Argentero, 2014; Smith et al., 2011), trauma exposure (Chopko et al., 2022), or work-related factors such as number of calls, stressors, income, and first responder organisation (McDonald et al., 2022; Smith et al., 2011). Further, one ANOVA found that firefighters with probable PTSD and alcohol use disorder (AUD) or probable PTSD alone reported significantly lower DM than those with probable AUD alone or trauma-exposure without mental health symptoms (LeBeaut et al., 2021), suggesting a protective effect of mindfulness against negative trauma responses.

Three of the four studies which explored DM and post-traumatic growth (PTG) reported significant results. DM had a small positive relationship with PTG in firefighters (Chen et al., 2021; Huang et al., 2019), predicting greater PTG in firefighters and trainee

police (Chopko et al., 2022; Huang et al., 2019). The observing facet had a small positive relationship with PTG in police and trainee police, whereas awareness and non-judgement had a small to medium negative relationship (Chopko et al., 2022; Chopko & Schwartz, 2009).

Negative Psychological Wellbeing Outcomes

Mental health symptoms were explored in 15 studies, including depression (n = 7), anxiety (n = 6), and general mental health symptoms (n = 2). All reported significant results. DM was negatively correlated with depression and anxiety across all measures in firefighters, police and mixed first responder groups, with small to medium effect sizes for anxiety, medium to large for depression (Counson et al., 2019; Fleischmann et al., 2021; McDonald et al., 2022; Senger et al., 2022; Serrano et al., 2020; Smith et al., 2011; Williams et al., 2010; Yu et al., 2020), and medium for general mental health symptoms (Fisher et al., 2019; Williams et al., 2010). The two studies on DM and suicidal thoughts and behaviours reported a small significant negative relationship in firefighters (Serrano et al., 2020; Stanley et al., 2019), as did the specific aspects of describing, awareness, and non-judgement facets, while observing had a small positive relationship. In regression analyses, DM significantly negatively predicted depression and anxiety symptoms in firefighters and first responders when controlling for demographic and work-related factors (Counson et al., 2019; McDonald et al., 2022; Smith et al., 2011). In a longitudinal study, greater baseline DM significantly predicted fewer depression symptoms in trainee police at 10-12 month follow-up when controlling for baseline depression scores (Williams et al., 2010). Therefore, DM may protect first responders against some mental health symptoms.

The association between DM and stress was explored in ten studies. Nine reported significant results, with negative associations. The effect size was medium to large in first

responders, police, and trainee police (Kaplan et al., 2018; Márquez et al., 2021; McDonald et al., 2022; Williams et al., 2010), and a small to medium association with occupational stressors in firefighters and police (Fisher et al., 2019; Lee et al., 2020; Senger et al., 2022; Serrano et al., 2020). DM significantly predicted lower perceived stress in firefighters and police, controlling for demographic factors (Lee et al., 2020) and stressors (Kaplan et al., 2018). Thus, those with greater DM may perceive fewer stressors at work and be less negatively affected by stress. The describing, awareness, and non-judgement facets were negatively related to stressors in firefighters and police, whereas observing had a small positive relationship (Colgan et al., 2021; Fleischmann et al., 2021; Kaplan et al., 2018; Lee et al., 2020; Serrano et al., 2020). Non-reactivity had either a negligible, small negative (Colgan et al., 2021; Fleischmann et al., 2021; Kaplan et al., 2018), or small positive relationship with stressors (Lee et al., 2020). In a longitudinal study over 21 days, Smith et al. (2019) found that greater DM significantly predicted smaller increases in negative affect and loneliness and smaller decreases in positive affect in firefighters on high stress days, suggesting that mindfulness may attenuate the negative effects of stress on wellbeing.

Burnout was explored in three studies, each reporting significant negative associations with DM. There was a large effect size for firefighters (Chen et al., 2019), small to medium for first responders (McDonald et al., 2022), and small to large for different mindfulness facets in police (Márquez et al., 2021). Different burnout measures may account for differences in effect sizes between studies. DM significantly negatively predicted burnout in firefighters and first responders in regression analyses which controlled for demographic and work-related factors (McDonald et al., 2022; Smith et al., 2011). Compassion fatigue was explored in one study. Compassion fatigue was significantly negatively related to awareness. The other facets were non-significantly related (negatively

for describing and non-judgement, and positively for observing and non-reactivity; Márquez et al., 2021). Thus, greater overall DM is related to lower burnout, while mindfulness facets have a mixed relationship with compassion fatigue.

Positive Psychological Wellbeing Outcomes

Positive outcomes were studied in six studies, each outcome explored by one or two studies. Each study reported significant results. DM was positively associated with subjective psychological wellbeing (Counson et al., 2019), optimism, sense of mastery (Smith et al., 2011), life satisfaction, resilience (McDonald et al., 2022), compassion satisfaction (Márquez et al., 2021; McDonald et al., 2022), and overall self-compassion (Fleischmann et al., 2021; Márquez et al., 2021). Effect sizes ranged from small to large between studies. This suggests that greater DM is related to greater positive wellbeing outcomes in first responders, though conclusions are limited by the small number of studies on each outcome.

In regression analyses, DM significantly predicted greater psychological wellbeing in firefighters when controlling for age and years of service (Counson et al., 2019), but not in experienced paramedics (Mitmansgruber et al., 2008). Mitmansgruber et al. (2008) included experiential avoidance in their model, which accounted for a significant proportion of the variance and may explain the lack of additional variance explained by DM. Greater DM did significantly predict life satisfaction in experienced paramedics over that explained by experiential avoidance (Mitmansgruber et al., 2008), but not in a mixed first responder group when controlling for demographic variables, income, and first responder organization (McDonald et al., 2022). As Mitmansgruber et al. (2008) was the only study focusing on paramedics, this may reflect differences in the relationship between DM and aspects of wellbeing across professional groups.

Physical Wellbeing

Five studies included a measure of physical wellbeing, each reporting significant results. In first responders, DM had a small to medium negative association with pain-related difficulties, such as pain intensity, pain-related disability, and pain interference (Colgan et al., 2021; LeBeaut et al., 2022), and with sleep disturbance (Serrano et al., 2020), general physical symptoms, alcohol use (Smith et al., 2011), and physical strain (Fisher et al., 2019). In regression analyses, greater DM significantly predicted fewer physical health symptoms when controlling for demographic factors and occupational stressors (Fisher et al., 2019; Smith et al., 2011), suggesting that DM is related to better physical wellbeing in first responders. However, the observing facet had a negligible relationship with pain intensity and disability (LeBeaut et al., 2022), and both observing and non-reactivity had a small positive relationship with sleep disturbance (Serrano et al., 2020), thus these aspects may not be related to better physical wellbeing.

Coping

Seven studies measured coping mechanisms; two covered cognitive reappraisal and expressive suppression, one experiential avoidance, and four social support. Each reported significant results. DM was positively associated with cognitive reappraisal and negatively associated with expressive suppression in firefighters, with a small effect size (Huang et al., 2019; Yu et al., 2020) and negatively associated with experiential avoidance in trainee police, with a medium to large effect size (Williams et al., 2010). DM had a medium to large positive relationship with perceived social support (Chen et al., 2019; Chen et al., 2021; Smith et al., 2011; Yu et al., 2020). Therefore, first responders with higher DM tended to use more ‘adaptive’ coping strategies, such as cognitive reappraisal, and fewer ‘maladaptive’

strategies, such as suppression and avoidance (Gross & John, 2003) and to rate themselves as having more coping resources in terms of greater social support.

Occupational Experience

Occupational experience was explored in six studies. One reported a significant result. Mitmansgruber et al. (2008) found that experienced paramedics reported greater DM than novices when controlling for age, but that DM was not related to number of traumatic workplace experiences. Other included studies also did not find a significant relationship between DM and trauma exposure (LeBeaut et al., 2022; Serrano et al., 2020), suggesting that tendency to be mindful is not related to traumatic experiences. Unlike Mitmansgruber et al. (2008), length of time in role had a negligible relationship with DM in other studies (LeBeaut et al., 2022; LeBeaut et al., 2021; Lee et al., 2020; Smith et al., 2011). This difference may be due to differences in development of DM over time between professional groups. However, as there was only one study on paramedics, it cannot be said that these findings would generalise to ambulance personnel more widely.

Mediators and Moderators

Fifteen studies used mediator and moderator analyses to explore relationships between DM and wellbeing.

Mediation

Three studies explored factors that mediated the relationships between DM and outcome variables, each reporting significant results. Greater cognitive reappraisal mediated the negative association between DM and PTSD symptoms and the positive association between DM and PTG, while lower use of expressive suppression mediated the relationship between DM and PTSD symptoms, but not DM and PTG in Structural Equation Models (SEM; Huang et al., 2019). In SEMs, greater perceived social support mediated the

negative relationships between DM and both PTSD symptoms and burnout (Chen et al., 2019). In mediation analyses, experiencing more moral transgressions at work mediated the negative relationship between DM and mental health symptoms (Senger et al., 2022). This suggests that DM may indirectly benefit wellbeing through its influence on using more helpful and fewer unhelpful coping strategies, perceiving oneself as having greater coping resources and perceiving fewer work-related stressors.

Mindfulness as a Moderator

Ten studies explored how DM moderated the relationships between wellbeing outcome variables, each reporting significant results. Greater DM reduced the positive associations between suicide risk and both PTSD symptoms and sleep disturbance (Serrano et al., 2020; Stanley et al., 2019), although the observing facet had the opposite effect, strengthening the effect of sleep disturbance on suicide risk. Greater DM attenuated the positive relationship between PTSD symptoms and pain-related disability in firefighters (LeBeaut et al., 2022).

Greater DM reduced the positive relationship between stress and negative wellbeing outcomes, including pain interference (Colgan et al., 2021), anxiety (Fleischmann et al., 2021), perceived stress (Kaplan et al., 2018), mental and physical health symptoms (Fisher et al., 2019) and musculoskeletal disorders (Lee et al., 2020). In a longitudinal study, Chen and Grupe (2021) found that greater DM reduced the positive relationship between occupational stressors and perceived stress over a week. Therefore, DM may attenuate the negative effect of PTSD, sleep disturbance and stress on first responders' wellbeing.

Further, DM moderated the relationship between perceived social support from family and PTG in another longitudinal study, such that greater baseline perceived social support predicted greater PTG three months later only for those with high DM (Chen et al.,

2021). This suggests that greater DM can strengthen the positive relationship between perceived social support and wellbeing.

Moderators of Mindfulness

Two studies explored moderators of the relationship between DM and wellbeing. Both reported significant results. McDonald et al. (2022) found that distress intolerance moderated the relationship between DM and both anxiety and depression. DM negatively predicted anxiety and depression only for those with high levels of distress intolerance. Perceived social support moderated the relationship between baseline DM and expressive suppression at a three-month follow-up, with DM only predicting lower use of expressive suppression for those with high perceived social support (Yu et al., 2020).

Discussion

Main Findings

This review aimed to explore the relationship between DM and wellbeing in first responders. Greater DM was related to lower levels of negative psychological and physical wellbeing outcomes, including PTSD symptoms, STS, depression and anxiety symptoms, stress, suicidality, pain-related difficulties, sleep disturbance, and physical strain. DM also attenuated the effect of mental health symptoms and stress on first responders' wellbeing and predicted fewer depression symptoms in longitudinal studies, with trauma-exposed firefighters with probable PTSD reporting lower DM than those without PTSD (LeBeaut et al., 2021). This supports the idea that mindfulness can protect against the negative effects of traumatic or stressful experiences over time (Boelen & Lenferink, 2018; Huang et al., 2022), and is in line with previous research that found greater DM was linked to lower levels of negative wellbeing outcomes such as mental health symptoms in general populations (Harper et al., 2022; Tomlinson et al., 2018) as well as other high-stress occupations such as

the military (Kachadourian et al., 2021) and emergency room nurses (Salvarani et al., 2019). As DM negatively predicted anxiety and depression symptoms for those with high levels of distress intolerance, but not low distress intolerance (McDonald et al., 2022), it may be that mindfulness buffers the negative effect of distress on wellbeing by allowing non-judgemental engagement with internal experiences for those who otherwise have difficulty tolerating distress, whereas this may not be required for those with greater distress tolerance.

Fewer reviewed studies explored positive wellbeing outcomes. In those that did, greater DM was associated with greater reported positive wellbeing, including psychological wellbeing, optimism, sense of mastery, life satisfaction, resilience, self-compassion, and PTG. This suggests that DM is linked to positive wellbeing in first responders, as in the general population (Lundwall et al., 2019; Soysa et al., 2021; Tomlinson et al., 2018), and healthcare workers (Lomas et al., 2018). However, conclusions drawn from these studies are limited as each outcome was only explored by one or two studies. Greater inclusion of positive wellbeing outcomes in research would therefore allow for greater clarification of these relationships.

Where reviewed studies explored coping mechanisms, DM was related to greater use of cognitive reappraisal, which is generally considered to be an adaptive coping strategy, and less use of avoidance and suppression-based strategies, which are generally considered maladaptive strategies (Gross & John, 2003). Greater use of cognitive reappraisal and lower use of expressive suppression mediated the relationship between DM and negative wellbeing outcomes, suggesting that mindfulness may indirectly benefit wellbeing through encouraging the use of helpful over unhelpful coping strategies. Prior research has found that, compared to active coping strategies such as cognitive reappraisal, coping strategies of

suppression or avoidance were related to worse wellbeing outcomes, including higher levels of PTSD, depression, anxiety, and stress symptoms in first responders (Dautovich et al., 2022; Gärtner et al., 2019; Kshtriya et al., 2022) and the general population (Brockman et al., 2017; Gross & John, 2003). Cognitive reappraisal may be more adaptive in the face of uncontrollable stressors (Troy et al., 2013), thus may be particularly useful for first responders who regularly encounter situations they are not able to control. Mindfulness may facilitate the use of such active coping strategies because it involves the non-judgemental acceptance of experience, thus is related to less need to avoid or suppress difficult internal experiences and a greater ability to engage with them (Hayes et al., 2006; Prakash et al., 2017), though more longitudinally designed studies would help to determine the causality of these relationships. Further, the current results found that greater DM predicted lower use of expressive suppression for those with high perceived social support (Yu et al., 2020). Thus, greater social support may interact with DM to encourage the use of proactive coping mechanisms, whereas those with lower support may feel the need to rely on internal suppression strategies to cope with stressful events (Zhou et al., 2014).

In this review, greater overall DM was related to better workplace wellbeing, including lower burnout and compassion fatigue, and higher compassion satisfaction. As well as having a negative impact on an individual's wellbeing, previous research has found burnout to be related to negative occupational outcomes in first responders, including worse job performance, following fewer safety procedures, increased behaviours that could compromise patient safety (Baier et al., 2018; Gomes et al., 2022; Smith et al., 2018), and higher turnover intention (Baier et al., 2018; Bria et al., 2013; Gomes et al., 2022), thus impacting on emergency service organisations and the wider public. As one intervention study found that compassion satisfaction increased and burnout decreased in emergency

medical technicians following a mindfulness intervention (Ducar et al., 2020), increasing first responders' DM could have benefits for emergency service organisations and the public by improving their workplace wellbeing.

With regards to the facets of DM, describing, acting with awareness, and non-judgement were the most consistently related to wellbeing outcomes in this review, including lower levels of PTSD symptoms, stress, compassion fatigue, and suicidality. This is similar to research with the general population, which found that acting with awareness and non-judgement were more strongly related to wellbeing than the other facets, including better psychological wellbeing (Tomlinson et al., 2018) and life satisfaction (Mattes, 2019) and lower levels of depression, anxiety (Carpenter et al., 2019), and PTSD symptoms (Reffi et al., 2019). However, awareness and non-judgement unexpectedly had a negative relationship with PTG, whereas observing had a positive relationship in the reviewed studies (Chopko et al., 2022; Chopko & Schwartz, 2009). Therefore, while observing was linked to more PTSD symptoms, it may be that being able to observe and thus cognitively appraise traumatic experiences may be necessary for PTG, while non-judgementally accepting the experience does not lead to the same growth (Chopko & Schwartz, 2009). This suggests that observing experiences during traumatic incidents may lead to both psychological distress and growth from it, in line with prior research suggesting that PTSD and PTG can co-occur (Blix et al., 2016; Jin et al., 2014).

Non-reactivity had a mixed relationship with wellbeing in the review. In one study with a general population, non-reactivity was associated with greater use of expressive suppression (Warner et al., 2021), therefore this variation may be accounted for by non-reacting to inner experiences being linked to active suppression of experience. Further research into the relationship between non-reactivity and expressive suppression would

lend support to this proposal. In previous research, the observing facet has been unrelated to negative wellbeing outcomes, including depression, anxiety, and PTSD symptoms (Carpenter et al., 2019; Harper et al., 2022; Mattes, 2019). However, observing tended to have a small positive relationship with negative wellbeing outcomes, including PTSD symptoms, stress, compassion fatigue, sleep disturbance, and suicidality in this review, as well as a positive relationship with positive outcomes of PTG and compassion satisfaction. This fits with Baer et al. (2006)'s finding that observing was associated with higher levels of mental health symptoms, thought suppression, and dissociation as well as greater openness, emotional intelligence, and self-compassion. Baer et al. (2006) suggest that this may be because those who are able to observe their experiences may still make critical judgements of that experience. Thus, observing may not lead to greater wellbeing unless there is also a non-judgemental approach (Harrington et al., 2016).

Limitations and Recommendations for Future Research

There are a series of limitations with the identified studies. First, there is a lack of objective methods to assess mindfulness, thus studies rely heavily on self-report data. This assumes that individuals can accurately assess their level of DM which may not be the case, particularly for those with low DM (Rau & Williams, 2016). Research has been further criticised due to a lack of consensus on a definition of mindfulness (Van Dam et al., 2018). Definitions vary between whether mindfulness is conceptualised as a unitary (Brown et al., 2007) or multi-faceted construct (Baer et al., 2006), which affects the tools used to measure mindfulness. The two most commonly used self-report mindfulness measures, the MAAS and FFMQ, have both been reported to have good psychometric properties (Baer et al., 2006; Brown & Ryan, 2003). However, the FFMQ was developed by incorporating items from five mindfulness questionnaires including the MAAS to arrive at a five-factor structure,

thus covers a broader concept than the MAAS (Baer et al., 2006). These measures also had different relationships with wellbeing outcomes in one review, with MAAS scores having a stronger negative relationship with PTSD symptoms than FFMQ scores (Harper et al., 2022), suggesting they may be measuring different constructs. Further, as the FFMQ covers distinct mindfulness aspects, it has been suggested that reporting facet scores is more appropriate than a general mindfulness score (Karl & Fischer, 2020), though several studies which used the FFMQ only report the total score. Therefore, the development of mindfulness measures based on a clearer definition would lend greater support to the current findings.

Second, most included studies relied on correlational data which cannot determine causality. It may be that DM improves wellbeing, or it may instead be that first responders with better psychological wellbeing tend to be more mindful as they are more able to engage with the present and approach difficult internal experiences non-judgementally. However, the few longitudinal studies in the review support the view that DM has a beneficial effect on the wellbeing of first responders over time. This is consistent with longitudinal research that found DM positively affected wellbeing, such as buffering the negative effects of stress or trauma (Donald et al., 2016; Huang et al., 2022), and predicting lower depression and anxiety in the general population (Prieto-Fidalgo et al., 2021) and in soldiers following combat deployment (Call et al., 2015). Further longitudinal studies measuring baseline DM and wellbeing over time could help to establish the direction of causality in the relationship between mindfulness and wellbeing in first responders.

Third, the high degree of heterogeneity between studies precluded the use of meta-analysis to synthesise data. There was significant variation between studies in terms of outcomes measured, measurement tools used, country, study design, and participant population, which limited comparisons across studies. High heterogeneity across first

responders' wellbeing outcomes has been highlighted in previous reviews (Berger et al., 2012; Petrie et al., 2018; Stanley et al., 2016), with suggested explanations for this including different combinations of professional groups in samples, differing outcome measures, unexplored correlates of mental health, lack of methodological rigour, and variation between countries (Petrie et al., 2018; Stanley et al., 2016). A focus on moderators of wellbeing in first responders in future research may help to clarify the sources of heterogeneity and factors that are most important in determining wellbeing in these professional groups.

Finally, ambulance staff were under-represented in the research. Only one of the 27 studies focused solely on ambulance staff, despite this group being exposed to more workplace violence than firefighters (Setlack, 2019), reporting higher rates of PTSD than firefighters and police (Berger et al., 2012), being more likely to attempt to end their own life than other first responders (Sawyer et al., 2022), and being more likely to end their own life than other healthcare professionals (Office for National Statistics [ONS], 2017). This indicates that research on the wellbeing of ambulance staff is important in understanding this increased rate of psychological difficulties and finding ways to ameliorate them.

Implications

The findings of this review suggest that greater DM is associated with better psychological and physical wellbeing in first responders, supporting the view that DM may benefit the wellbeing of individuals in such highly stressful occupations. Therefore, mindfulness techniques could be used to support first responders' wellbeing. In the UK, public sector employers have been recommended to identify staff at increased risk of stress or trauma and create plans to support staff wellbeing (Stevenson & Farmer, 2017). As lower DM was related to worse wellbeing in first responders in this review, mindfulness measures

could be used to identify staff who may be at greater risk of negative wellbeing outcomes as one way to meet this recommendation.

Further, many senior emergency service staff in the UK have recognised the importance of staff wellbeing and committed to prioritise the mental health and wellbeing of their staff (Mind, 2021). Mindfulness could be included in plans to support staff wellbeing as previous research found mindfulness-based interventions to improve aspects of wellbeing in police officers (Hoeve et al., 2021), firefighters (Denkova et al., 2020), and emergency medical staff (Ducar et al., 2020). Mind (2019) highlighted the importance of co-developing and tailoring support to the specific needs of different first responder groups in order to maximise their efficacy. The Division of Clinical Psychology (2010) has suggested there may be a role for clinical psychologists in co-developing such interventions. This review may support those developing interventions for staff in choosing which mindfulness facets to focus on, in particular acting with awareness and non-judgement, which were the most consistently linked with wellbeing in the findings.

Conclusion

The findings of the review suggest that first responders who have greater DM report fewer negative psychological and physical wellbeing outcomes and greater positive psychological wellbeing outcomes, with DM attenuating the negative effect of stress on their wellbeing. DM may benefit wellbeing by facilitating the use of more adaptive and fewer maladaptive coping strategies and perceiving oneself to have greater coping resources and fewer stressors. However, given the limitations of the current literature, further research is needed to determine the long-term effects of mindfulness on the wellbeing of first responders, particularly regarding positive wellbeing outcomes and under-

represented groups such as ambulance staff. A more clearly defined construct of mindfulness would also add to the robustness of the evidence base.

References

Argentero, P., Setti, I., Piccoli, B., & Bellotto, M. (2015). The impact of mindfulness on psychosomatic complaints among firefighters: The mediator role of vicarious traumatisation. *The International Journal of Business Research, 15*(2), 7-12. http://dx.doi.org/10.18374/IJBR-15-2.1

Baer, R. A., Smith, G. T., & Allen, K. B. (2004). Assessment of mindfulness by self-report: The Kentucky Inventory of Mindfulness Skills. *Assessment*, *11*(3), 191-206. https://doi.org/10.1177/1073191104268029

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*(1), 27-45. https://doi-org.ezproxy.lancs.ac.uk/10.1177/1073191105283504

Baier, N., Roth, K., Felgner, S., & Henschke, C. (2018). Burnout and safety outcomes - a cross-sectional nationwide survey of EMS-workers in Germany. *BMC Emergency Medicine*, *18*(1), 1-9. https://doi.org/10.1186/s12873-018-0177-2

Barr, N., Keeling, M., & Castro, C. (2019). Associations between mindfulness, PTSD, and depression in combat deployed post-9/11 military veterans. *Mindfulness, 10*(11), 2403-2414. https://doi.org/10.1007/s12671-019-01212-9

Berger, W., Coutinho, E. S. F., Figueira, I., Marques-Portella, C., Luz, M. P., Neylan, T. C., Marmar, C. R., & Mendlowicz, M. V. (2012). Rescuers at risk: A systematic review and meta-regression analysis of the worldwide current prevalence and correlates of PTSD in rescue workers. *Social Psychiatry and Psychiatric Epidemiology*, *47*(6), 1001-1011. https://doi.org/10.1007/s00127-011-0408-2

Blix, I., Birkeland, M. S., Hansen, M. B., & Heir, T. (2016). Posttraumatic growth - an antecedent and outcome of posttraumatic stress: Cross-lagged associations among individuals exposed to

terrorism. *Clinical Psychological Science*, *4*(4), 620-628. https://doi.org/10.1177/2167702615615866

Boden, M. T., Bernstein, A., Walser, R. D., Bui, L., Alvarez, J., & Bonn-Miller, M. O. (2012). Changes in facets of mindfulness and posttraumatic stress disorder treatment outcome. *Psychiatry Research, 200*(2-3), 609-613. https://doi.org/10.1016/j.psychres.2012.07.011

Boelen, P. A., & Lenferink, L. I. (2018). Experiential acceptance and trait-mindfulness as predictors of analogue post-traumatic stress. *Psychology and Psychotherapy: Theory, Research and Practice*, *91*(1), 1-14. https://doi.org/10.1111/papt.12138

Borritz, M., Christensen, K. B., Bültmann, U., Rugulies, R., Lund, T., Andersen, I., Villadsen, E., & Kristensen, T. S. (2010). Impact of burnout and psychosocial work characteristics on future long-term sickness absence: Prospective results of the Danish PUMA Study among human service workers. *Journal of Occupational and Environmental Medicine, 52*(10), 964-970. https://doi.org/10.1097/JOM.0b013e3181f12f95

Bravo, A. J., Pearson, M. R., & Kelley, M. L. (2018). Mindfulness and psychological health outcomes: A latent profile analysis among military personnel and college students. *Mindfulness*, *9*(1), 258-270. https://doi.org/10.1007/s12671-017-0771-5

Bria, M., Băban, A., Andreica, S., & Dumitraşcu, D. L. (2013). Burnout and turnover intentions among Romanian ambulance personnel. *Procedia-Social and Behavioral Sciences, 84*, 801-805. https://doi.org/10.1016/j.sbspro.2013.06.650

Bricker, L. R., Petermann, T. N., Hines, M., & Sands, J. (2013). The Legal Definitions of “First Responder”. *NCHRP Research Results Digest*, *385*. https://dx.doi.org/10.17226/22451

Brockman, R., Ciarrochi, J., Parker, P., & Kashdan, T. (2017). Emotion regulation strategies in daily life: Mindfulness, cognitive reappraisal and emotion suppression. *Cognitive Behaviour Therapy*, *46*(2), 91-113. https://doi.org/10.1080/16506073.2016.1218926

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822– 848. http://dx.doi.org/10.1037/ 0022-3514.84.4.822

Brown K. W., Ryan R. M., & Creswell J. D., (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, *18*(4), 211-237. https://doi.org/10.1080/10478400701598298

Burnett, M. E., Sheard, I., & St Clair-Thompson, H. (2019). The prevalence of compassion fatigue, compassion satisfaction and perceived stress, and their relationships with mental toughness, individual differences and number of self-care actions in a UK police force. *Police Practice and Research, 21*(4), 383–400. https://doi.org/10.1080/15614263.2019.1617144

Call, D., Pitcock, J., & Pyne, J. (2015). Longitudinal evaluation of the relationship between mindfulness, general distress, anxiety, and PTSD in a recently deployed national guard sample. *Mindfulness*, *6*(6), 1303-1312. https://doi.org/10.1007/s12671-015-0400-0

Carpenter, J. K., Conroy, K., Gomez, A. F., Curren, L. C., & Hofmann, S. G. (2019). The relationship between trait mindfulness and affective symptoms: A meta-analysis of the Five Facet Mindfulness Questionnaire (FFMQ). *Clinical Psychology Review, 74*, 101785. https://doi.org/10.1016/j.cpr.2019.101785

Chen, S., & Grupe, D. W. (2021). Trait mindfulness moderates the association between stressor exposure and perceived stress in law enforcement officers. *Mindfulness, 12*(9)**,** 2325-2338. https://doi.org/10.1007/s12671-021-01707-4

Chen, J., Li, W., An, Y., Zhang, Y., Du, J., & Xu, W. (2019). Perceived social support mediates the relationships of dispositional mindfulness to job burnout and posttraumatic stress disorder among Chinese firefighters. *Psychological Trauma: Theory, Research, Practice, and Policy 14*(7), 1117-1123. http://dx.doi.org/10.1037/tra0000534

Chen, J., Li, J., Zhou, Y., Liu, X., & Xu, W. (2021). Enhancement from being present: Dispositional mindfulness moderates the longitudinal relationship between perceived social support and posttraumatic growth in Chinese firefighters. *Journal of Affective Disorders, 279***,** 111-116. https://doi.org/10.1016/j.jad.2020.09.137

Chopko, B. A., Adams, R. E., Davis, J., Dunham, S. M., & Palmieri, P. A. (2022). Associations between mindfulness, posttraumatic stress disorder symptoms, and posttraumatic growth in police academy cadets: An exploratory study. *Journal of Traumatic Stress, 35,* 967-975. https://doi.org/10.1002/jts.22803

Chopko, B. A., & Schwartz, R. C. (2009). The relation between mindfulness and posttraumatic growth: A study of first responders to trauma-inducing incidents. *Journal of Mental Health Counseling, 31*(4)**,** 363-376. https://doi.org/10.17744/mehc.31.4.9w6lhk4v66423385

Chopko, B. A., & Schwartz, R. C. (2013). The relation between mindfulness and posttraumatic stress symptoms among police officers. *Journal of Loss and Trauma, 18*(1)**,** 1-9. https://doi.org/10.1080/15325024.2012.674442

Colgan, D. D., Eddy, A., Bowen, S., & Christopher, M. (2021). Mindful nonreactivity moderates the relationship between chronic stress and pain interference in law enforcement officers. *Journal of Police and Criminal Psychology, 36*(1)**,** 56-62. https://doi.org/10.1007/s11896-019-09336-3

Counson, I., Hosemans, D., Lal, T. J., Mott, B., Harvey, S. B., & Joyce, S. (2019). Mental health and mindfulness amongst Australian fire fighters. *BMC Psychology, 7*(1)**,** 34. https://doi.org/10.1186/s40359-019-0311-2

Creswell, J. D., Way, B. M., Eisenberger, N. I., & Lieberman, M. D. (2007). Neural correlates of dispositional mindfulness during affect labeling. *Psychosomatic Medicine*, *69*(6), 560-565. https://doi.org/10.1097/PSY.0b013e3180f6171f

Dautovich, N. D., Katjijova, M., Cyrus, J. W., & Kliewer, W. (2022). Duty-related stressors, adjustment, and the role of coping processes in first responders: A systematic review. *Psychological Trauma: Theory, Research, Practice, and Policy*. http://dx.doi.org/10.1037/tra0001258

Denkova, E., Zanesco, A. P., Rogers, S. L., & Jha, A. P. (2020). Is resilience trainable? An initial study comparing mindfulness and relaxation training in firefighters. *Psychiatry Research*, *285*, 112794. https://doi.org/10.1016/j.psychres.2020.112794

Division of Clinical Psychology. (2010). *Clinical Psychology Leadership Development Framework.* https://www.bps.org.uk/sites/www.bps.org.uk/files/Member%20Networks/Faculties/Leadership/Clinical%20Psychology%20Leadership%20Development%20Framework%20-

Donald, J. N., Atkins, P. W., Parker, P. D., Christie, A. M., & Ryan, R. M. (2016). Daily stress and the benefits of mindfulness: Examining the daily and longitudinal relations between present-moment awareness and stress responses. *Journal of Research in Personality*, *65*, 30-37. https://doi.org/10.1016/j.jrp.2016.09.002

Ducar, D. M., Penberthy, J. K., Schorling, J. B., Leavell, V. A., & Calland, J. F. (2020). Mindfulness for healthcare providers fosters professional quality of life and mindful attention among emergency medical technicians. *Explore, 16*(1), 61-68. https://doi.org/10.1016/j.explore.2019.07.015

Fisher, D. M., Kerr, A. J., & Cunningham, S. (2019). Examining the moderating effect of mindfulness on the relationship between job stressors and strain outcomes. *International Journal of Stress Management, 26*(1)**,** 78-88. https://doi.org/10.1037/str0000090

Fleischmann, M. H., Manova, V., Wisener, M., & Khoury, B. (2021). Mindfulness facets and self-compassion as moderators of the relationship between occupational stressors and mental

health symptoms in Canadian police officers. *Canadian Journal of Behavioural Science, 54*(4), 347-353. https://doi.org/10.1037/cbs0000290

Gärtner, A., Behnke, A., Conrad, D., Kolassa, I. T., & Rojas, R. (2019). Emotion regulation in rescue workers: Differential relationship with perceived work-related stress and stress-related symptoms. *Frontiers in Psychology*, *9*, 2744. https://doi.org/10.3389/fpsyg.2018.02744

Glomb, T. M., Duffy, M. K., Bono, J. E., & Yang, T. (2011). Mindfulness at work. In A. Joshi, H. Liao, & J. Martocchio (Eds.), *Research in personnel and human resources management* (pp. 115–157). Emerald Group Publishing Limited. http://dx.doi.org/10.1108/S0742-7301(2011)0000030005

Gomes, G. P., Ribeiro, N., & Gomes, D. R. (2022). The impact of burnout on police officers' performance and turnover intention: The moderating role of compassion satisfaction. *Administrative Sciences*, *12*(3), 92. https://doi.org/10.3390/admsci12030092

Grabovac A. D., Lau M. A., & Willett B. R. (2011). Mechanisms of mindfulness: A Buddhist psychological model. *Mindfulness*, 2(3), 154–166. https://doi.org/10.1007/s12671-011-0054-5

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*(2), 348. https://doi.org/10.1037/0022-3514.85.2.348

Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of mediation studies. *Clinical Psychology Review, 37*, 1-12. https://doi.org/10.1016/j.cpr.2015.01.006

Harper, L., Jones, A., Goodwin, L., & Steven, G. (2022). Association between trait mindfulness and symptoms of post-traumatic stress: A meta-analysis. *Journal of Psychiatric Research, 152,* 233-241. https://doi.org/10.1016/j.jpsychires.2022.05.027

Harrington, R., Loffredo, D. A., & Perz, C. A. (2016). Dispositional mindfulness facets and self-insight as predictors of subjective well-being: An exploratory analysis. *North American Journal of Psychology, 18*(3).

Harrison, R., Jones, B., Gardner, P., & Lawton, R. (2021). Quality assessment with diverse studies (QuADS): An appraisal tool for methodological and reporting quality in systematic reviews of mixed-or multi-method studies. *BMC Health Services Research*, *21*(1), 1-20. https://doi.org/10.1186/s12913-021-06122-y

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

Hayes, S. C., Luoma, J., Bond, F., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes, and outcomes. *Behaviour Research and Therapy, 44*(1), 1-25. https://doi.org/10.1016/j.brat.2005.06.006

Hoeve, M., de Bruin, E. I., van Rooij, F., & Bögels, S. M. (2021). Effects of a mindfulness-based intervention for police officers. *Mindfulness*, *12*(7), 1672-1684. https://doi.org/10.1007/s12671-021-01631-7

Hopwood, T. L., & Schutte, N. S. (2017). A meta-analytic investigation of the impact of mindfulness-based interventions on post traumatic stress. *Clinical Psychology Review, 57*, 12–20. https://doi.org/10.1016/j.cpr.2017.08.002

Huang, Y. L., Li, Z. W., Kung, Y. W., & Su, Y. J. (2022). The facilitating role of dispositional mindfulness in the process of posttraumatic growth: A prospective investigation.

Psychological Trauma: Theory, Research, Practice, and Policy, 14(S1), S174-S181. https://doi.org/10.1037/tra0001163

Huang, Q., Zhang, Q., An, Y., & Xu, W. (2019). The relationship between dispositional mindfulness and PTSD/PTG among firefighters: The mediating role of emotion regulation. *Personality and Individual Differences, 151,* 109492. https://doi.org/10.1016/j.paid.2019.07.002

Hülsheger, U. R., Alberts, H. J., Feinholdt, A., & Lang, J. W. (2013). Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. *Journal of Applied Psychology, 98*, 310 –325. http://dx.doi.org/10.1037/a0031313

Jahnke, S. A., Poston, W. S., Haddock, C. K., & Murphy, B. (2016). Firefighting and mental health: Experiences of repeated exposure to trauma. *Work, 53*(4), 737–744. https://doi-org.ezproxy.lancs.ac.uk/10.3233/wor-162255

Jin, Y., Xu, J., & Liu, D. (2014). The relationship between post traumatic stress disorder and post traumatic growth: Gender differences in PTG and PTSD subgroups. *Social Psychiatry and Psychiatric Epidemiology*, *49*(12), 1903-1910. https://doi.org/0.1007/s00127-014-0865-5

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. https://doi.org/10.1177/1078390317695266

Kabat-Zinn, J. (1994). *Wherever you go there you are: Mindfulness meditation in everyday life*. Hyperion.

Kachadourian, L. K., Harpaz-Rotem, I., Tsai, J., Southwick, S., & Pietrzak, R. H. (2021). Mindfulness as a mediator between trauma exposure and mental health outcomes: Results from the National Health and Resilience in Veterans Study. *Psychological Trauma: Theory, Research, Practice, and Policy*, *13*(2), 223. https://doi.org/10.1037/tra0000995

Kaplan, J. B., Christopher, M. S., & Bowen, S. (2018). Dispositional mindfulness moderates the relationship between occupational stressors and perceived stress among law enforcement personnel. *Journal of Police and Criminal Psychology, 33*(3)**,** 227-232. https://doi/org/10.1007/s11896-017-9246-9.

Karl, J. A., & Fischer, R. (2020). Revisiting the five-facet structure of mindfulness. *Measurement Instruments for the Social Sciences, 2*(1), 1-16. https://doi.org/10.1186/s42409-020-00014-3

Karl, J. A., & Fischer, R. (2022). The state of dispositional mindfulness research. *Mindfulness, 13,* 1-16. https://doi.org/10.1007/s12671-022-01853-3

Keng S. L., Smoski M. J., & Robins C. J. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review*, *31*(6), 1041–1056. https://doi.org/10.1016/j.cpr.2011.04.006

Kshtriya, S., Lawrence, J., Kobezak, H. M., Popok, P. J., & Lowe, S. (2022). Investigating strategies of emotion regulation as mediators of occupational stressors and mental health outcomes in first responders. *International Journal of Environmental Research and Public Health*, *19*(12), 7009. https://doi.org/10.3390/ijerph19127009

Kula, S. (2017). Occupational stress, supervisor support, job satisfaction, and work-related burnout: Perceptions of Turkish National Police (TNP) members. *Police Practice and Research, 18*(2), 146–159. https://doi-org.ezproxy.lancs.ac.uk/10.1080/15614263.20

Lawn, S., Roberts, L., Willis, E., Couzner, L., Mohammadi, L., & Goble, E. (2020). The effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel: A systematic review of qualitative research. *BMC Psychiatry, 20*(1), 1-16. https://doi.org/10.1186/s12888-020-02752-4

LeBeaut, A., Zegel, M., Healy, N. A., Rogers, A. H., Buser, S. J., & Vujanovic, A. A. (2022). PTSD symptom severity, pain intensity, and pain-related disability among trauma-exposed

firefighters: The moderating role of mindfulness. *Mindfulness, 13*(3), 786-798. https://doi.org/10.1007/s12671-022-01836-4.

LeBeaut, A., Zegel, M., Leonard, S. J., Bartlett, B. A., & Vujanovic, A. A. (2021). Examining transdiagnostic factors among firefighters in relation to trauma exposure, probable PTSD, and probable alcohol use disorder. *Journal of Dual Diagnosis, 17*(1)**,** 52-63. https://doi.org/10.1080/15504263.2020.1854411.

Lee, J. H., Lee, D., Kim, J., Jeon, K., & Sim, M. (2017). Duty-related trauma exposure and posttraumatic stress symptoms in professional firefighters. *Journal of Traumatic Stress, 30*(2), 133–141. https://doi-org.ezproxy.lancs.ac.uk/10.1002/jts.22180

Lee, J. H., Lee, J., & Lee, K. S. (2020). Moderated mediation effect of mindfulness on the relationship between muscular skeletal disease, job stress, and turnover among Korean firefighters. *Safety and Health at Work, 11*(2)**,** 222-227. https://doi.org/10.1016/j.shaw.2020.03.006

Lewis-Schroeder, N. F., Kieran, K., Murphy, B. L., Wolff, J. D., Robinson, M. A., & Kaufman, M. L. (2018). Conceptualization, assessment, and treatment of traumatic stress in first responders: A review of critical issues. *Harvard Review of Psychiatry, 26*(4), 216–227. https://doi.org/10.1097/ HRP.0000000000000176

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., & Eiroa-Orosa, F. J. (2018). A systematic review of the impact of mindfulness on the well-being of healthcare professionals. *Journal of Clinical Psychology*, *74*(3), 319-355. https://doi.org/10.1002/jclp.22515

Lu, F., Xu, Y., Yu, Y., Peng, L., Wu, T., Wang, T., Liu, B., Xie, J., Xu, S., & Li, M. (2019). Moderating effect of mindfulness on the relationships between perceived stress and mental health outcomes among Chinese intensive care nurses. *Frontiers in Psychiatry, 10*, 260. https://doi.org/10.3389/fpsyt.2019.00260

Lundwall, C., Fairborn, S., Quinones-Camacho, L., Estep, J., & Davis, E. (2019). Self-regulation mechanisms explain how dispositional mindfulness promotes well-being. *Journal of Positive Psychology and Wellbeing, 3*(2), 153-164.

Márquez, M. A., Galiana, L., Oliver, A., & Sansó, N. (2021). The impact of a mindfulness-based intervention on the quality of life of Spanish national police officers. *Health and Social Care in the Community, 29*(5)**,** 1491-1501. https://doi.org/10.1111/hsc.13209.

Mattes, J. (2019). Systematic review and meta-analysis of correlates of FFMQ mindfulness facets. *Frontiers in Psychology*, *10*, 2684. https://doi.org/10.3389/fpsyg.2019.02684

McDonald, M. A., Yang, Y., & Lancaster, C. L. (2022). The association of distress tolerance and mindful awareness with mental health in first responders. *Psychological Services*, *19*(1), 34-44. https://doi.org/10.1037/ser0000588

Mesmer-Magnus, J., Manapragada, A., Viswesvaran, C., & Allen, J. W. (2017). Trait mindfulness at work: A meta-analysis of the personal and professional correlates of trait mindfulness. *Human Performance, 30*(2–3), 79–98. https://doi.org/10.1080/08959285.2017.1307842

Mind. (2019). *Wellbeing and mental health support in the emergency services.* https://www.mind.org.uk/media-a/4572/20046_mind-blue-light-programme-legacy-report-v12_online.pdf

Mind. (2021). *Mental health at work commitment.* https://bluelighttogether.org.uk/app/uploads/2022/05/Blue-Light-Mental-Health-at-Work-Commitment_Wellbeing-Leads-Guidance_Final.pdfs

Mitmansgruber, H., Beck, T. N., & Schüßler, G. (2008). 'Mindful helpers': Experiential avoidance, meta-emotions, and emotion regulation in paramedics. *Journal of Research in Personality*, *42*(5), 1358-1363. https://doi.org/10.1016/j.jrp.2008.03.012

Office for National Statistics. (2017). *Suicide by occupation, England: 2011 to 2015.* https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/suicidebyoccupation/england2011to2015

Petrie, K., Milligan-Saville, J., Gayed, A., Deady, M., Phelps, A., Dell, L., Forbes, D., Bryant, R. A., Calvo, R. A., Glozier, N., & 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*(9), 897-909. https://doi.org/10.1007/s00127-018-1539-5

Prakash, R. S., Whitmoyer, P., Aldao, A., & Schirda, B. (2017). Mindfulness and emotion regulation in older and young adults. *Aging and Mental Health*, *21*(1), 77-87. https://doi.org/10.1080/13607863.2015.1100158

Prieto-Fidalgo, Á., Gómez-Odriozola, J., Royuela-Colomer, E., Orue, I., Fernández-González, L., Oñate, L., Cortazar, N., Iraurgi, I., & Calvete, E. (2021). Predictive associations of dispositional mindfulness facets with anxiety and depression: A meta-analytic structural equation modeling approach. *Mindfulness, 13*, 37-53. https://doi.org/10.1007/s12671-021-01756-9

Prudenzi, A., D. Graham, C., Flaxman, P. E., & O'Connor, D. B. (2022). Wellbeing, burnout, and safe practice among healthcare professionals: Predictive influences of mindfulness, values, and self-compassion. *Psychology, Health and Medicine, 27*(5), 1130-1143. https://doi.org/10.1080/13548506.2021.1898651

Quaglia, J. T., Braun, S. E., Freeman, S. P., McDaniel, M. A., & Brown, K. W. (2016). Meta-analytic evidence for effects of mindfulness training on dimensions of self-reported dispositional mindfulness. *Psychological Assessment*, *28*(7), 803-818. http://dx.doi.org/10.1037/pas0000268

Randal, C., Pratt, D., & Bucci, S. (2015). Mindfulness and self-esteem: A systematic review. *Mindfulness*, *6*(6), 1366-1378. https://doi.org/10.1007/s12671-015-0407-6

Rau, H. K., & Williams, P. G. (2016). Dispositional mindfulness: A critical review of construct validation research. *Personality and Individual Differences*, *93*, 32-43. https://doi.org/10.1016/j.paid.2015.09.035

Reffi, A. N., Pinciotti, C. M., Darnell, B. C., & Orcutt, H. K. (2019). Trait mindfulness and PTSD symptom clusters: Considering the influence of emotion dysregulation. *Personality and Individual Differences*, *137*, 62-70. https://doi.org/10.1016/j.paid.2018.08.010

Regehr, C., Hill, J., Knott, T., & Sault, B. (2003). Social support, self-efficacy and trauma in new recruits and experienced firefighters. *Stress and Health*, *19*(4), 189-193. https://doi.org/10.1002/smi.974

Reid, B. O., Næss-Pleym, L. E., Bakkelund, K. E., Dale, J., Uleberg, O., & Nordstrand, A. E. (2022). A cross-sectional study of mental health, posttraumatic stress symptoms and post exposure changes in Norwegian ambulance personnel. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine, 30*(1), 1-9. https://doi.org/10.1186/s13049-021-00991-2

Reti, T., de Terte, I., & Stephens, C. (2022). Perceived social support predicts psychological distress for ambulance personnel. *Traumatology*, *28*(2), 267-278. https://doi.org/10.1037/trm0000331

Sala, M., Rochefort, C., Lui, P. P., & Baldwin, A. S. (2020). Trait mindfulness and health behaviours: A meta-analysis. *Health Psychology Review, 14*(3), 345–393. https://doi.org/10.1080/17437199.2019.1650290

Salvarani, V., Rampoldi, G., Ardenghi, S., Bani, M., Blasi, P., Ausili, D., Di Mauro, S., & Strepparava, M. G. (2019). Protecting emergency room nurses from burnout: The role of dispositional

mindfulness, emotion regulation and empathy. *Journal of Nursing Management, 27*(4), 765-774. https://doi.org/10.1111/jonm.12771

Sawyer, S., Cowlishaw, S., Kendrick, K., Boyle, M., Dicker, B., & Lord, B. (2022). A systematic review of incidence, prevalence, and trends in health outcomes for Australian and New Zealand paramedics. *Prehospital Emergency Care*, 1-20. https://doi.org/10.1080/10903127.2022.2064019

Senger, A. R., Torres, D., & Ratcliff, C. G. (2022). Potentially morally injurious events as a mediator of the association of gratitude and mindfulness with distress. *Psychological Trauma: Theory, Research, Practice, and Policy*. https://doi.org/10.1037/tra0001233

Serrano, D. M., Rufino, K. A., Tran, J. K., & Vujanovic, A. A. (2020). Association between sleep disturbances and suicide risk among firefighters: The moderating role of mindfulness. *Mindfulness*, *11*(12), 2793-2803. https://doi.org/10.1007/s12671-020-01491-7

Setlack, J. (2019). *Workplace violence and mental health of paramedics and firefighters* [Unpublished master's thesis]. University of Manitoba.

Setti, I., & Argentero, P. (2014). The role of mindfulness in protecting firefighters from psychosomatic malaise. *Traumatology: An International Journal*, *20*(2), 134-141. https://doi.org/10.1037/h0099398

Skeffington, P. M., Rees, C. S., & Mazzucchelli, T. (2017). Trauma exposure and post-traumatic stress disorder within fire and emergency services in Western Australia. *Australian Journal of Psychology, 69*(1), 20–28. https://doi-org.ezproxy.lancs.ac.uk/10.1111/ajpy.12120

Smith, B. W., Ford, C. G., & Steffen, L. E. (2019). The role of mindfulness in reactivity to daily stress in urban firefighters. *Mindfulness*, *10*(8), 1603-1614. https://doi.org/10.1007/s12671-019-01102-0

Smith, T. D., Hughes, K., DeJoy, D. M., & Dyal, M. A. (2018). Assessment of relationships between work stress, work-family conflict, burnout and firefighter safety behavior outcomes. *Safety Science, 103*, 287-292. https://doi.org/10.1016/j.ssci.2017.12.005

Smith, B. W., Ortiz, J. A., Steffen, L. E., Tooley, E. M., Wiggins, K. T., Yeater, E. A., Montoya, J. D., & Bernard, M. L. (2011). Mindfulness is associated with fewer PTSD symptoms, depressive symptoms, physical symptoms, and alcohol problems in urban firefighters. *Journal of Consulting and Clinical Psychology*, *79*(5), 613-617. https://doi.org/10.1037/a0025189

Soravia, L. M., Schwab, S., Walther, S., & Müller, T. (2021). Rescuers at risk: Posttraumatic stress symptoms among police officers, fire fighters, ambulance personnel, and emergency and psychiatric nurses. *Frontiers in Psychiatry, 11*, 602064. https://doi.org/10.3389/fpsyt.2020.602064

Soysa, C. K., Zhang, F., Parmley, M., & Lahikainen, K. (2021). Dispositional mindfulness and serenity: Their unique relations with stress and mental well-being. *Journal of Happiness Studies*, *22*(3), 1517-1536. https://doi.org/10.1007/s10902-020-00282-0

Stanley, I. H., Boffa, J. W., Tran, J. K., Schmidt, N. B., Joiner, T. E., & Vujanovic, A. A. (2019). Posttraumatic stress disorder symptoms and mindfulness facets in relation to suicide risk among firefighters. *Journal of Clinical Psychology*, *75*(4), 696-709. https://doi.org/10.1002/jclp.22748

Stanley, I. H., Hom, M. A., & Joiner, T. E. (2016). A systematic review of suicidal thoughts and behaviors among police officers, firefighters, EMTs, and paramedics. *Clinical Psychology Review*, *44*, 25-44. https://doi.org/10.1016/j.cpr.2015.12.002

Stevenson, F., & Farmer, P. (2017). *Thriving at Work: The Stevenson/Farmer review of mental health and employers.* Department for Work and Pensions and Department of Health and Social Care.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/658145/thriving-at-work-stevenson-farmer-review.pdf

Syed, S., Ashwick, R., Schlosser, M., Jones, R., Rowe, S., & Billings, J. (2020). Global prevalence and risk factors for mental health problems in police personnel: A systematic review and meta-analysis. *Occupational and Environmental Medicine, 77(*11), 737-747. http://dx.doi.org/10.1136/oemed-2020-106498

Taylor, J., McLean, L., Korner, A., Stratton, E., & Glozier, N. (2020). Mindfulness and yoga for psychological trauma: Systematic review and meta-analysis. *Journal of Trauma and Dissociation*, *21*(5), 536-573. https://doi.org/10.1080/15299732.2020.1760167

Tomaka, J., Magoc, D., Morales-Monks, S. M., & Reyes, A. C. (2017). Posttraumatic stress symptoms and alcohol-related outcomes among municipal firefighters. *Journal of Traumatic Stress, 30*(4), 416–424. https://doi-org.ezproxy.lancs.ac.uk/10.1002/jts.22203

Tomlinson, E. R., Yousaf, O., Vittersø, A. D., & Jones, L. (2018). Dispositional mindfulness and psychological health: A systematic review. *Mindfulness, 9*(1), 23–43. https://doi.org/10.1007/s12671-017- 0762-6

Troy, A. S., Shallcross, A. J., & Mauss, I. B. (2013). A person-by-situation approach to emotion regulation: Cognitive reappraisal can either help or hurt, depending on the context. *Psychological Science*, *24*(12), 2505-2514. https://doi/org/10.1177/0956797615627417

Van Dam, N. T., van Vugt, M. K., Vago, D. R., Schmalzl, L., Saron, C. D., Olendzki, A., Meissner, T., Lazar, S. W., Kerr, C. E., Gorchov, J., Fox, K. C. R., Field, B. A., Britton, W. B., Brefczynski-Lewis, J. A., & Meyer, D. E. (2018). Mind the hype: A critical evaluation and prescriptive agenda for research on mindfulness and meditation. *Perspectives on Psychological Science:*

A Journal of the Association for Psychological Science, 13(1), 36–61. https://doi.org/10.1177/1745691617709589

Walach, H., Buchheld, N., Buttenmüller, V., Kleinknecht, N., & Schmidt, S. (2006). Measuring mindfulness—the Freiburg Mindfulness Inventory (FMI). *Personality and Individual Differences*, *40*(8), 1543-1555. https://doi.org/10.1016/j.paid.2005.11.025

Warner, E. A., Hernandez, T., & Veilleux, J. C. (2021). Examining Facets of Mindfulness in the Relationship Between Invalidating Childhood Environments and Emotion Regulation. *Psychological Reports, 124*(3), 1134-1149. https://doi.org/10.1177/0033294120933151

Westphal, M., Bingisser, M. B., Feng, T., Wall, M., Blakley, E., Bingisser, R., & Kleim, B. (2015). Protective benefits of mindfulness in emergency room personnel. *Journal of Affective Disorders, 175*, 79-85. https://doi.org/10.1016/j.jad.2014.12.038

Williams, V., Ciarrochi, J., & Deane, F. P. (2010). On being mindful, emotionally aware, and more resilient: Longitudinal pilot study of police recruits. *Australian Psychologist*, *45*(4), 274-282. https://doi.org/10.1080/00050060903573197

World Health Organization. (2017). *Depression and other common mental disorders: Global health estimates.* https://apps.who.int/iris/bitstream/handle/10665/254610/W?sequence=1

Yu, S., Zhou, Y., Zhang, Q., & Xu, W. (2020). Dispositional mindfulness, perceived social support and emotion regulation among Chinese firefighters: A longitudinal study. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues, 41,* 4079-4087. https://doi.org/10.1007/s12144-020-00930-x

Zhou, X., Wu, X. C., An, Y. Y., & Chen, J. L. (2014). The roles of rumination and social support in the associations between core belief challenge and post-traumatic growth among adolescent survivors after the Wenchuan earthquake. *Acta Psychologica Sinica, 46*, 1509–1520. https://doi-org.ezproxy.lancs.ac.uk/10.3724/SP.J.1041.2014.01509

Figure 1

Flow Chart of Search Strategy and Study Selection

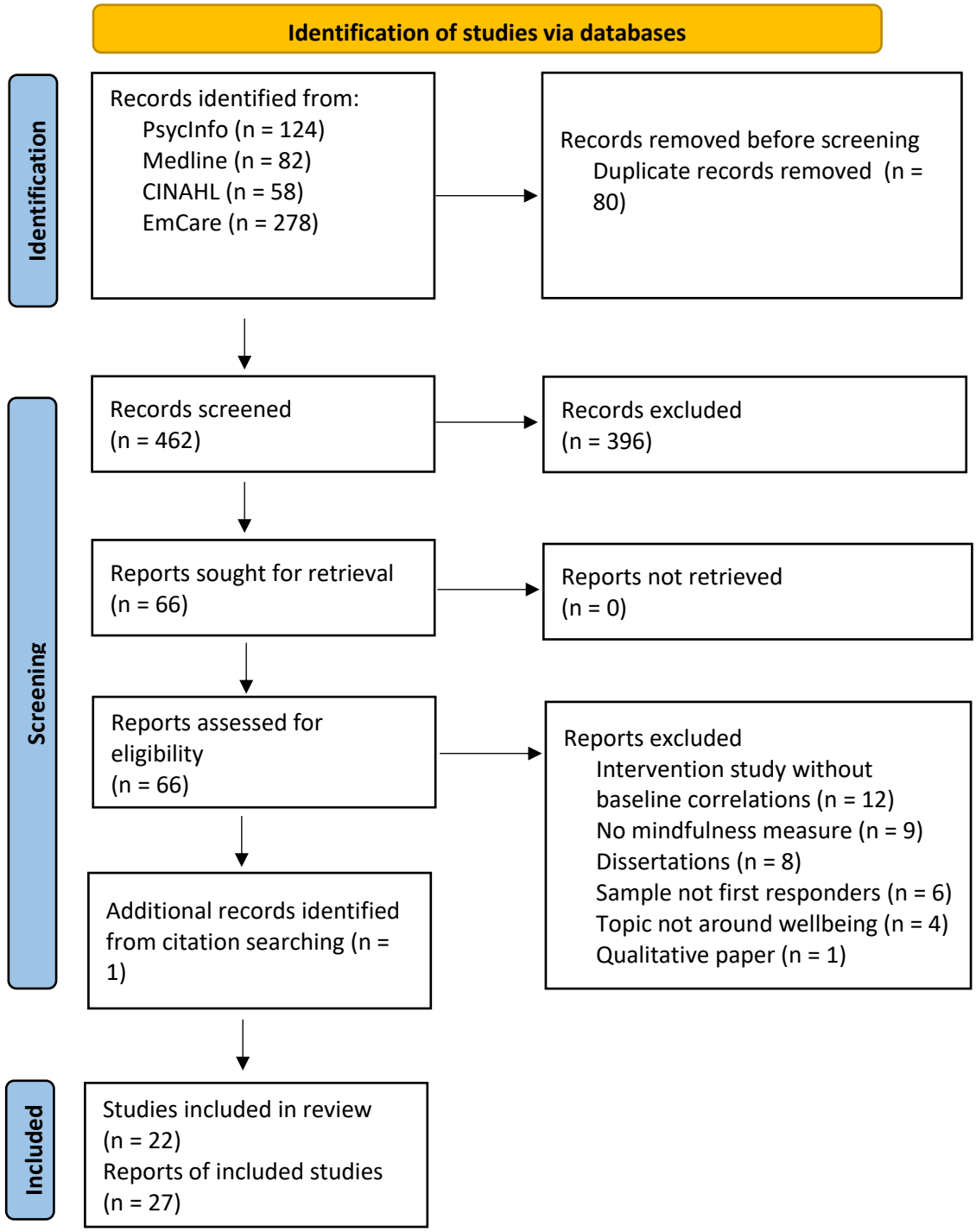

Table 1

Characteristics of Included Studies

Study	Participants; mean age (SD); reported gender	Country	Design	Analysis	Mindfulness and wellbeing measures	Quality rating [a]
Argentero et al. (2015)	*N*=255 professional and volunteer firefighters; 37.0 (3.7); 98% male	Italy	Cross-section	Correlation Confirmatory Factor Analysis Structural Equation Modelling	Mindful Attention Awareness Scale (MAAS) Secondary Traumatic Stress Scale (STSS) General Health Questionnaire (GHQ-12)	19
Chen & Grupe (2021)	*N*=144 police officers; 40.0 (8.4);	USA	Longitudinal, baseline data from RCT	Moderation analysis	Five Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Perceived Stress Scale (PSS-10) Police Stress Questionnaire (PSQ)	29

	58.8% male, 41.2% female				Brief Resilience Scale (BRS) Work events log	
Chen et al. (2019)	*N*=409 firefighters; 21.3 (1.7); 100% male	China	Cross-section	Correlation Structural Equation Modelling Mediation analysis	Mindful Attention Awareness Scale (MAAS) PTSD Checklist for DSM-5 (PCL-5) Perceived Social Support Scale (PSSS) Maslach Burnout Inventory-General Survey (MBI-GS)	29
Chen et al. (2021) *Used subsample of Chen et al. (2019)*	*N*=340 firefighters; 21.3 (1.7); 100% male	China	Longitudinal	Correlation Multiple regression Moderation analysis	Mindful Attention Awareness Scale (MAAS) Perceived Social Support Scale (PSSS) Post-Traumatic Growth Inventory (PTGI)	29
Chopko et al. (2022)	*N*=379 police academy cadets;	USA	Cross-section	Correlation Multiple regression	Five-Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) PTSD Checklist for DSM-5 (PCL-5)	29

	26.7 (5.5); 92.1% male				Post-Traumatic Growth Inventory (PTGI); Adverse Childhood Experiences Questionnaire (ACE) Life Events Checklist (LEC-5) Critical Incident History Questionnaire (CIHQ)	
Chopko & Schwartz (2009)	*N*=183 police officers; 37.9 (8.4); 92.9% male, 7.1% female	USA	Cross-section	Correlation Multiple regression	Kentucky Inventory of Mindfulness Skills (KIMS) Post-Traumatic Growth Inventory (PTGI)	26
Chopko & Schwartz (2013) *Used same sample as Chopko &*	*N*=183 police officers; 37.9 (8.4); 92.9% male, 7.1% female	USA	Cross-section	Correlation Multiple regression	Kentucky Inventory of Mindfulness Skills (KIMS) Impact of Events Scale-Revised (IES-R)	25

Schwartz (2009)						
Colgan et al. (2021)	*N*=60 police officers; 42.6 (7.1); 66% male	USA	Cross-section, baseline data from an uncontrolled intervention study	Correlation Multiple regression Moderation analysis	Five Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Police Stress Questionnaire (PSQ) Patient-Reported Outcomes Measurement Information System (PROMIS)	23
Counson et al. (2019)	*N*=114 firefighters; 42.1 (8.8);	Australia	Cross-section, baseline	Correlation Multiple regression	Freiburg Mindfulness Inventory (FMI-14) Hospital Anxiety and Depression Scale (HADS) World Health Organisation-5 Wellbeing Index (WHO-5)	33

	95.6% male, 4.4% female		data from an RCT			
Fisher et al. (2019)	*N*=239 police officers; 36.2 (8.2); 87.3% male, 7.6% female, 5.2% no response	USA	Cross-section	Correlation Multiple regression Moderation analysis	Mindful Awareness Attention Scale (MAAS) Quantitative Workload Inventory (QWI) Organisational Commitment Scale (OCS) Work Interests Schedule (WIS) Physical Symptoms Inventory (PIS) Job dissatisfaction items	25
Fleischmann et al. (2021)	*N*=138 police officers; No mean given: 0.8% 18-24y; 23.1% 25-35y;	Canada	Cross-section	Correlation Moderation analysis	Five Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Police Stress Questionnaire (PSQ) Self-Compassion Scale-Short Form (SCS-SF) Depression Anxiety and Stress Scale (DASS-21)	27

	52.3% 36-49y; 23.8% 50y+; 64.6% male, 35.4% female					
Huang et al. (2019) *Used same sample as Chen et al. (2019)*	*N*=409 firefighters; 21.3 (1.7); 100% male	China	Cross-section	Correlation Structural Equation Modelling Mediation analysis	Mindful Attention Awareness Scale (MAAS) Emotion Regulation Scale (ERS) PTSD Checklist for DSM-5 (PCL-5) Post-Traumatic Growth Inventory (PTGI)	25
Kaplan et al. (2018)	*N*=72 police personnel; 43.5 (7.7); 57% male	USA	Cross-section, baseline data from an RCT	Correlation Multiple regression Moderation analysis	Five Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Police Stress Questionnaire (PSQ) Perceived Stress Scale (PSS-4)	26

						31
LeBeaut et al. (2022)	*N*=266 professional and volunteer firefighters; 40.5 (9.7); 92.5% male	USA	Cross-section	Correlation Multiple regression Moderation analysis	Five Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Life Events Checklist (LEC-5) PTSD Checklist for DMS-5 (PCL-5) Graded Chronic Pain Scale (GCPS)	
LeBeaut et al. (2021)	*N*=657 firefighters; 38.7 (8.6); 94.0% male, 6.0% female	USA	Cross-section	ANOVA ANCOVA	Five Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Life Events Checklist (LEC-5) PTSD Checklist for DMS-5 (PCL-5) Alcohol Use Disorders Identification Test (AUDIT) Anxiety Sensitivity Inventory (ASI-3) Distress Tolerance Scale (DTS) Difficulties in Emotion Regulation Scale (DERS-16)	29

Lee et al. (2020)	*N*=549 firefighters; No mean given: 14.4% <29y; 41.0% 30-39y; 33.2% 40-49y; 11.1% 50y+; 100% male	Korea	Cross-section	Correlation Multiple regression Moderation analysis	Five-Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Korean Occupational Stress Scale-Short Form (KOSS-SF) Musculoskeletal disorders score Turnover intention items	26
Márquez et al. (2021)	*N*=20 police officers; 45.6 (10.2); 45% male, 55% female	Mallorca, Spain	Cross-section, baseline data from an uncontrolled	Correlation	Five-Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Self-Compassion Scale (SCS) Professional Quality of Life Scale (ProQOL) Perceived Stress Scale (PSS-10)	30

			interventio n study			
McDonald et al. (2022)	*N*=176 professional or volunteer first responders; No mean given: 16.5% 18-29y; 30.1% 30-39y; 32.4% 40-49y; 21.0% 50y+; 74% male	USA	Cross-section	Correlation Multiple regression Moderation analysis	Mindful Attention Awareness Scale (MAAS) Distress Intolerance Index (DII) Depression Anxiety and Stress Scale (DASS-21) PTSD Checklist for DSM-5 (PCL-5) Secondary Traumatic Stress Scale (STSS) Abbreviated Maslach Burnout Inventory (aMBI) Professional Quality of Life Scale (ProQOL-5) Satisfaction with Life Scale (SWLS) Brief Resilience Scale (BRS)	30
Mitmansgruber et al. (2008)	*N*=239 paramedics (134	Austria	Cohort study	ANCOVA Multiple regression	Mindful Attention Awareness Scale (MAAS) Meta-Emotion Scale (MES) Acceptance and Action Questionnaire (AAQ-2)	25

	experienced and 105 novices); Experienced: 33.3 (6.7) Novice: 25.0 (5.3); Experienced: 61.9% male Novice: 53.5% male				Satisfaction with Life Scale (SWLS) Psychological Wellbeing Scale (PWB) Positive and Negative Affect Schedule (PANAS)	
Senger et al. (2022)	*N*=242 first responders; Ages not reported;	USA	Cross-section	Correlation Mediation analysis	Mindful Attention Awareness Scale (MAAS) Moral Injury Events Scale (MIES) Gratitude, Resentment and Appreciation-Short Form (GRAT-S) Posttraumatic Disorder Checklist-Civilian (PCL-C)	30

	83.9% male; 16.1% female				Generalized Anxiety Disorder Scale (GAD-7) Patient Health Questionnaire (PHQ-8)	
Serrano et al. (2020)	*N*=865 firefighters; 38.5 (8.6); 94.0% male, 5.3% female, 0.7% transgender	USA	Cross-section	Correlation Multiple regression Moderation analysis	Five Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Sources of Occupational Stress (SOOS-14) Life Events Checklist (LEC-5) Inventory of Depression and Anxiety Symptoms (IDAS) Pittsburgh Sleep Quality Index (PSQI) Suicide Behaviours Questionnaire-Revised (SBQ-R)	27
Setti & Argentero (2014)	*N*=176 firefighters; 37.6 (8.7); 100% male	Italy	Cross-section	Correlation Multiple regression	Mindful Attention Awareness Scale (MAAS) Utrecht Work Engagement Scale (UWES-9) Secondary Traumatic Stress Scale (STSS) General Health Questionnaire (GHQ-12)	31

Smith et al. (2019)	*N*=78 fire service staff; 39.4 (9.0); 73% male	USA	Longitudinal	Multilevel modelling	Mindful Attention Awareness Scale (MAAS) Hospital Anxiety and Depression Scale (HADS) Beck Depression Inventory (BDI-II); Posttraumatic Diagnostic Scale (PDS) Mood Adjectives Checklist Item on loneliness	25
Smith et al. (2011)	*N*=124 firefighters; 33.7 (8.1); 93% male	USA	Cross-section	Correlation Multiple regression	Mindful Attention Awareness Scale (MAAS) Alcohol Use Disorder Identification Test (AUDIT) Beck Depression Inventory (BDI-II) Revised Life Orientation Test (LOT-R); Personal Mastery Scale (PMS) Patient Health Questionnaire (PHQ-15) Posttraumatic Diagnostic Scale (PDS) Interpersonal Support Evaluation List (ISEL)	23

Stanley et al. (2019)	*N*=831 firefighters; 38.4 (8.5); 94.5% male, 4.8% female, 0.7% transgender	USA	Cross-section	Correlation Multiple regression Moderation analysis	Five Factor Mindfulness Questionnaire-Short Form (FFMQ-SF) Life Events Checklist (LEC-5) PTSD Checklist for DSM-5 (PCL-5) Suicide Behaviour Questionnaire-Revised (SBQ-R)	30
Williams et al. (2010)	*N*=60, trainee police officers at Time 1, probationary constables at Time 2; Ages not reported;	Australia	Longitudinal	Correlation Multiple regression	Mindful Attention Awareness Scale (MAAS) Acceptance and Action Questionnaire (AAQ-II) White Bear Suppression Inventory (WBSI) Toronto Alexithymia Scale (TAS-20) General Health Questionnaire (GHQ-12) Depression Anxiety and Stress Scale (DASS-21)	28

	73% male, 27% female					
Yu et al. (2020) *Used same sample as Chen et al. (2019)*	*N*=340 firefighters; 21.3 (1.6); 100% male	China	Longitudinal	Correlation Moderation analysis	Mindful Attention Awareness Scale (MAAS) Emotion Regulation Scale (ERS) Perceived Social Support Scale (PSSS) PTSD Checklist for DSM-5 (PCL-5) Centre for Epidemiological Studies Depression Scale (CES-D)	27

[a] Quality rated using the QuADS tool which has a minimum score of 0 and a maximum score of 39.

Table 2

Main Findings from Included Studies

Study	Effect size (Pearson's r)	Main Findings
Argenteo et al. (2015)	DM and: Intrusion (r=-.34*) General dysphoria (r=-.37*)	In a Structural Equation Model, the direct path from DM to general dysphoria (β=-.15, *p*>.05) was not significant, whereas the path from DM to intrusion was significant (β=-.69, *p*<.01), suggesting DM had an indirect effect on general dysphoria through lower intrusion.
Chen & Grupe (2021)	No correlations given	DM moderated the association between daily stressors and perceived stress for routine stressors (β=-.02, p=.049), such that higher DM attenuated the relationship between daily stressors and perceived stress. DM did not moderate the association for acute/traumatic (β=.001, *p*=.858) or interpersonal stressors (β=-.01, *p*=.148).
Chen et al. (2019)	DM and: Perceived social support (r=.35*) Burnout (r=-.51*) PTSD symptoms (r=-.60*)	In an indirect effect model, DM positively predicted perceived social support (β=-0.38, p< 001) and negatively predicted PTSD (β=-0.59, p<.001) and job burnout (β=-0.47, p<.001). Perceived social support mediated the relationship between DM and both PTSD symptoms (indirect effect =-0.05) and burnout (indirect effect =-0.11).

Chen et al. (2021)	DM and: Time 1 perceived social support in family (r=.26*) Time 1 perceived social support outside family (r=.36*) Time 2 PTG (r=.09)	DM moderated the relationship between perceived social support within the family and PTG at three-month follow-up (β= .13, *p*= 0.014) when controlling for age, years of service, perceived social support outside the family and baseline PTG, such that perceived social support was positively associated with PTG for those with high, but not low, DM.
Chopko et al. (2022)	Observing and: PTSD symptoms (r=.14*) PTG (r=.26*) Describing and: PTSD symptoms (r=-.15*) PTG (r=.07) Awareness and: PTSD symptoms (r=-.24*)	In regression analyses which included worldviews and DM facets, the non-judgement facet was the only significant predictor of PTSD symptoms, negatively predicting PTSD symptoms (β=−.31, *p*<.001); observing was the only significant predictor of PTG, positively predicting PTG (β=.18, *p*=.004).

	PTG (r=-.13*) Non-judging and: PTSD symptoms (r=-.41*) PTG (r=-.12*) Non-reactivity and: PTSD symptoms (r=.06) PTG (r=.06)	
Chopko & Schwartz (2009)	PTG and DM facets: Non-judgemental acceptance (r=-.30*) Describing (r=.16*) Observing (r=.27*) Acting with Awareness (r=-.08)	In regression analyses, the non-judgemental acceptance facet negatively predicted PTG (*t*=-3.22, *p*=.002).

Chopko & Schwartz (2013) *Used same sample as Chopko & Schwartz (2009)*	Non-judgemental acceptance and: Intrusion (r=-.50*) Hyperarousal (r=-.43*) Avoidance (r=-.49*) Describing and: Intrusion (r=-.13) Hyperarousal (r=-.18*) Avoidance (r=-.13) Awareness and: Intrusion (r=-.25*) Hyperarousal (r=-.19*) Avoidance (r=-.26*) Observing and: Intrusion (r=.28*)	In regression analyses, the non-judgemental acceptance facet negatively predicted intrusion (t=-5.06, p<.001), hyperarousal (t=-4.34, p<.001) and avoidance (t = -4.71, p < .001). Describing negatively predicted hyperarousal (t=-2.44, p<.05).

	Hyperarousal (r=.23*) Avoidance (r=.28*)	
Colgan et al. (2021)	Non-reactivity and: Pain interference (r=-.26*) Organisational stress (r=-.09)	Non-reactivity moderated the positive relationship between organisational stress and pain interference (*b*=−.04, *t*(55) = −2.86, *p* = .006), such that greater non-reactivity attenuated the effect of organisational stress on pain interference.
Counson et al. (2019)	DM and: Depression (r=-.48*) Anxiety (r=-.49*) Psychological wellbeing (r=.52*)	In regression analyses, DM negatively predicted depression (*b*=-.48, *F*(1,107)=31.17, p<.001) and anxiety (*b*=-.49, *F*(1, 107)=33.66, p<.001), and positively predicted well-being (*b*=.50, *F*(1,107)=39.62, p<.001), when controlling for age and years of service.
Fisher et al. (2019)	DM and: Workload (r=-.15*) Organisational constraints (r=-.31*)	DM negatively predicted mental strain (β=-0.38, *p*<.001) and physical strain (β=-0.33, *p*<.001), when accounting for workload, organisational constraints, and experienced incivility. DM moderated the relationship between workload and mental strain (β -0.15, *p*=.009) and between workload and physical strain (β=-0.15, *p*=.012), such that these relationships were weaker at higher levels of DM.

	Experienced incivility (r=-.32*) Mental strain (r=-.46*) Physical strain (r=-.41*) Job dissatisfaction (r=-.27*)	
Fleischmann et al. (2021)	<u>Observing</u> and: Overall self-compassion (r=.16) Operational stress (r=.14) Organisational stress (r=.22*) Anxiety (r=.00) Stress (r=-.06) Depression (r=.00) <u>Describing</u> and:	Non-judgement moderated the relationship between anxiety and both operational stressors (β=−.01, *t*(110)=−3.22, *p*=.002) and organisational stressors (β=.01, *t*(126)=−2.23, *p*=.003), such that stressors were associated with increased anxiety for those with low or average non-judgement, but not those with high levels of non-judgement.

Overall self-compassion

(r=.49*)

Operational stress (r=-.24*)

Organisational stress (r=-

.20*)

Anxiety (r=-.26*)

Stress (r=-.36*)

Depression (r=-.38*)

Awareness and:

Overall self-compassion

(r=.51*)

Operational stress (r=-.38*)

Organisational stress (r=.-

44*)

Anxiety (r=-.40*)

Stress (r=-.53*)

Depression (r=-.58*)

Non-judging and:

Overall self-compassion

(r=.67*)

Operational stress (r=-.43*)

Organisational stress (r=-

.38*)

Anxiety(r=-.50*)

Stress (r=-.58*)

Depression (r=-.71*)

Non-reactivity and:

Overall self-compassion

(r=.45*)

Operational stress (r=-.07)

	Organisational stress (r=-.03) Anxiety (r=-.23*) Stress (r=-.35*) Depression (r=-.25*)	
Huang et al. (2019) *Used same sample as Chen et al. (2019)*	DM and: Cognitive reappraisal (r=.15*) Expressive suppression (r=-.25*) PTSD symptoms (r=-.60*) PTG (r=.15*)	In an indirect effect model, the relationship between DM and PTSD was mediated by cognitive reappraisal (β=-.004, *p*<.01) and expressive suppression (β=-.009, *p*<.01). The relationship between DM and PTG was mediated by cognitive reappraisal (β=-.036, *p*<.01), but not expressive suppression (β=.012, *p*>.05).
Kaplan et al. (2018)	<u>Awareness</u> and: Organisational stress (r=-.22) Operational stress (r=-.13)	In regression analyses, acting with awareness (β=-.88, *p*=.02) and non-judgement (β=-1.20, *p*=.004) negatively predicted perceived stress, when accounting for organisational stressors. Non-reactivity moderated the relationship between operational stressors and perceived stress (β = -1.18, p = .01),

	Perceived stress (r=-.48*) Non-judging and: Organisational stress (r=-.17) Operational stress (r=-.17) Perceived stress (r=-.46*) Non-reactivity and: Organisational stress (r=-.14) Operational stress (r=-.06) Perceived stress (r=-.31*)	such that the relationship was significant only for those with low or average, but not high, non-reactivity.
LeBeaut et al. (2022)	DM and: Trauma exposure (r=-.07) PTSD symptoms (r=-.45*) Pain intensity (r=-.26*) Pain disability (r=-.33*) Observing and:	In regression analyses, DM negatively predicted pain-related disability (β=−2.579, *p*=0.002), but not pain intensity (β=−1.522, *p*=0.055), when accounting for age, years of service, trauma exposure, and PTSD symptoms. DM moderated the positive association between PTSD symptoms and pain-related disability, such that the association was significant for firefighters with low DM (β=−0.25, *p*<0.001), but not high DM (β=−0.04, *p*=0.744).

Trauma exposure (r=.18*)

PTSD symptoms (r=.08)

Pain intensity (r=.02)

Pain disability (r=.02)

Describing and:

Trauma exposure (r=-.05)

PTSD symptoms (r=-.36*)

Pain intensity (r=-.18*)

Pain disability (r=-.18*)

Awareness and:

Trauma exposure (r=-.19*)

PTSD symptoms (r=-.41*)

Pain intensity (r=-.23*)

Pain disability (r=-.35*)

Non-judging and:

	Trauma exposure (r=-.18*) PTSD symptoms (r=-.43*) Pain intensity (r=-.26*) Pain disability (r=-.30*) <u>Non-reactivity</u> and: Trauma exposure (r=.06) PTSD symptoms (r=-.17*) Pain intensity (r=-.08) Pain disability (r=-.12*)	
LeBeaut et al. (2021)	No correlations given	Firefighters with probable PTSD and AUD had lower DM than those with trauma-exposure-only and those with probable AUD-alone, but did not significantly differ from those with probable PTSD-alone (*F*=14.21, *p*<.001).
Lee et al. (2020)	DM and: Occupational stress (r=-.38*) Turnover intention (r=-.25*)	DM negatively predicted occupational stress (β=−.426, *p*<.001) when controlling for age, education level, work role seniority, and years of service. DM moderated the positive effect of musculoskeletal disorders on occupational stress (β=.028, *p*<0.05).

	Musculoskeletal disorders (r=-.004)	
Márquez et al. (2021)	Observing and: Self-compassion scale: over-identification (r=.17), self-kindness (r=.12), mindfulness (r=.23), isolation (r=.10), common humanity (r=.38), self-judgement (r=-.10) Compassion satisfaction (r=.28) Burnout (r=-.55*) Compassion fatigue (r=.10) Perceived stress (r=-.02) Describing and:	Following a mindfulness-based intervention, DM significantly increased (F(5, 14)=7.441, p=.001), as did quality of life (F(3, 17)=3.376, p=.043), while reported stress reduced (t(18) = 2.863, p=.010).

Self-compassion scale: over-identification (r=-.13), self-kindness (r=.63*), mindfulness (r=.41), isolation (r=-.33), common humanity (r=.28), self-judgement (r=-.38)

Compassion satisfaction (r=.74*)

Burnout (r=-.64*)

Compassion fatigue (r=-.21)

Perceived stress (r=-.47*)

Awareness and:

Self-compassion scale: over-identification (r=-.58*), self-

kindness (r=.36), mindfulness

(r=.37), isolation (r=-.40),

common humanity (r=-.01),

self-judgement (r=-.48*)

Compassion satisfaction

(r=.17)

Burnout (r=-.38)

Compassion fatigue (r=-.65*)

Perceived stress (r=-.35)

Non-judging and:

Self-compassion scale: over-

identification (r=-.67*), self-

kindness (r=.51*),

mindfulness (r=.49*),

isolation (r=-.68*), common

humanity (r=.11), self-

judgement (r=-.61*)

Compassion satisfaction

(r=.10)

Burnout (r=-.47*)

Compassion fatigue (r=-.57)

Perceived stress (r=-.55)

Non-reactivity and:

Self-compassion scale: over-

identification (r=.01), self-

kindness (r=.21), mindfulness

(r=.21), isolation (r=-.00),

common humanity (r=.44),

self-judgement (r=-.22)

	Compassion satisfaction (r=.26) Burnout (r=-.27) Compassion fatigue (r=.28) Perceived stress (r=-.16)	
McDonald et al. (2022)	DM and: Distress intolerance (r=-.55*) Depression (r=-.52*) Anxiety (r=-.49*) Stress (r=-57*) PTSD symptoms (r=-.58*) Secondary traumatic stress (r=-.51*) Personal accomplishment (r=.17*)	In regression analyses, DM negatively predicted depression symptoms (β=-.24, *p*<.001), anxiety symptoms (β=-.21, *p*<.01), stress (β=-.238, *p*<.001), PTSD symptoms (β=-.37, *p*<.001), secondary traumatic stress (β=-.35, *p*<.001), depersonalisation (β=-.29, *p*<.001), and emotional exhaustion (β=-.33, *p* <.001), and positively predicted personal accomplishment (β=.20, *p*<.05) and compassion satisfaction (β=.24, *p*<.01) when accounting for age, relationship status, gender, income, and first responder organisation. Distress intolerance moderated the relationships between DM and both anxiety and depression, such that DM negatively predicted anxiety (β =−.15, *p*=.016) and depression (β=−.11, *p*<.05) for those with high, but not low, distress intolerance.

	Depersonalisation (r=-.29*) Emotional exhaustion (r=-.40*) Compassion satisfaction (r=.32*) Life satisfaction (r=.39*) Resilience (r=.37*)	
Mitmansgruber et al. (2008)	No correlations given	DM was higher in expert compared to novice paramedics (F=34.235, p<.001). In regression analyses with expert paramedics, DM positively predicted satisfaction with life (β=−.15, p<.01), but not psychological wellbeing (β=−.08, p>.05), when accounting for experiential avoidance.
Senger et al. (2022)	No correlations given	Moral transgressions mediated the negative associations between DM and symptoms of PTSD, anxiety, and depression. DM was negatively associated with moral transgressions (b=-.39, p<.001), which was in turn positively associated with PTSD (b=2.36, p<.001), anxiety (b=.51, p=.03), and depression symptoms (b=.66, p=.005).

Serrano et al. (2020)	DM and: Occupational stress (r=-.19*) Trauma exposure (r=.09*) Distress (r=-.24*) Sleep disturbance (r=-.17*) Suicide risk (r=-.13*) <u>Observing</u> and: Occupational stress (r=.25*) Trauma exposure (r=.18*) Distress (r=.18*) Sleep disturbance (r=.16*) Suicide risk (r=.20*) <u>Describing</u> and: Occupational stress (r=-.10*) Trauma exposure (r=.08*)	DM moderated the association between sleep disturbance and suicide risk ($F(3861)=47.21$, $\beta=-.10$, $p<.01$), as did the awareness ($F(3861)=62.46$, $\beta=-.15$, $p<.001$) and non-judgment facets ($F(3861)=85.37$, $\beta=-.23$, $p<.001$), such that sleep disturbance was more strongly associated with suicide risk at lower levels than higher levels. The observing facet moderated this association but in the opposite direction ($F(3861)=60.50$, $\beta=.17$, $p < .001$), such that sleep disturbance was more strongly associated with suicide risk at higher levels of observing than lower levels.

Distress (r=-.16*)

Sleep disturbance (r=-.15*)

Suicide risk (r=-.05)

Awareness and:

Occupational stress (r=-.41*)

Trauma exposure (r=-.16*)

Distress (r=-.38*)

Sleep disturbance (r=-.34*)

Suicide risk (r=-.28*)

Non-judging and:

Occupational stress (r=-.39*)

Trauma exposure (r=-.10*)

Distress (r=-.36*)

Sleep disturbance (r=-.28*)

Suicide risk (r=-.31*)

	Non-reactivity and:	
	Occupational stress (r=.13*)	
	Trauma exposure (r=.20*)	
	Distress (r=.06)	
	Sleep disturbance (r=.13*)	
	Suicide risk (r=.09*)	
Setti & Argentero (2014)	DM and: Vigour (r=.35*) Dedication (r=.21*) Absorption (r=-.02) Intrusion (r=-.45*) Arousal (r=-.61*) General dysphoria (r=-.41*) Social dysfunction (r=-.25*) Loss of confidence (r=-.33*)	In regression analyses, DM negatively predicted post-trauma intrusion (β=-.40, *p*<.01) and arousal symptoms (β=-.59, *p*<.01), as well as general dysphoria (β=-.41, *p*<.01), loss of confidence (β=-.26, *p*<.01) and social dysfunction (β=-.20, *p*<.05) when controlling for age, work role seniority, and when accounting for work vigour, dedication and absorption.

Smith et al. (2019)	No correlations given	In multilevel models, those with higher DM had smaller increases in negative affect (*t*=-2.35, *p*=.022) and loneliness (*t*=-2.25, *p*=.028), and smaller decreases in positive affect (*t*=1.98, *p*=.048) on high stress days. Models were adjusted for the previous day's score on the dependent variable, baseline anxiety, depression, and PTSD symptoms, and age, gender, education, income, months of service, and day in the study.
Smith et al. (2011)	DM and: Stress (r=-.08) Optimism (r=.27*) Mastery (r=.38*) Social support (r=.54*) PTSD symptoms (r=-.40*) Depression (r=-.50*) Physical symptoms (r=-.41*) Alcohol use (r=-.18*)	In regression analyses, DM negatively predicted PTSD symptoms (β=-.32, *p*<.01), depression (β=-.29, *p*<.01), physical health symptoms (β=-.31, *p* <.01), and alcohol problems (β=-.24, *p*<.05), when accounting for age, education, income, work calls in the past year, occupational stressors, years of service, optimism, personal mastery, and social support.

Stanley et al. (2019)	DM and: PTSD symptoms (r=-.30*) Suicide risk (r=-.14*) <u>Observing</u> and: PTSD symptoms (r=.17*) Suicide risk (r=.16*) <u>Describing</u> and: PTSD symptoms (r=-.19*) Suicide risk (r=-.06) <u>Awareness</u> and: PTSD symptoms (r=-.43*) Suicide risk (r=-.28*) <u>Non-judging</u> and: PTSD symptoms (r=-.39*) Suicide risk (r=-.29*)	The facets of acting with awareness (β=−0.002, p<0.001) and non-judgement (β=−0.003, p<0.001) moderated the positive association between PTSD symptoms and suicide risk, such that greater levels of each attenuated the association between PTSD symptoms and suicide risk. Observing also moderated this association (β=0.001, p<0.001), but in the opposite direction, such that higher levels of observing strengthened the association between PTSD symptoms and suicide risk.

	Non-reactivity and:	
	PTSD symptoms (r=.05)	
	Suicide risk (r=.08*)	
Williams et al. (2010)	Time 1 DM and: Alexithymia (r=-.56*) Experiential avoidance (r=-.38*) Thought suppression (r=-.53*) Mental health symptoms (r=-.40*) Depression (r=-.34*) Anxiety (r=-.22) Stress (r=-.43*) Time 2 DM and:	Baseline DM negatively predicted depression at a 10-12 month follow-up (β=-.39, *p*<.01), when controlling for baseline depression scores.

	Alexithymia (r=-.62*) Experiential avoidance (r=- .58*) Thought suppression (r=- .58*) Mental health symptoms (r=- .34*) Depression (r=-.50*) Anxiety (r=-.27*) Stress (r=-.52*)	
Yu et al. (2020) *Used same sample*	DM and: Time 1 cognitive reappraisal (r=.12*) Time 1 expressive suppression (r=-.25*)	Baseline perceived social support moderated the relationship between baseline DM and expressive suppression at three-month follow-up (β=-.12, *p*<.05), such that greater DM was associated with lower expressive suppression for those with high, but not low, perceived social support. The moderating effect of perceived social support was not significant for cognitive reappraisal (β=-.06, *p*>.05).

as Chen et al. (2019)	Time 1 perceived social support (r=.35*) Time 2 PTSD symptoms (r=-.39*) Time 2 depression (r=-.36*) Time 2 cognitive reappraisal (r=.14*) Time 2 expressive suppression (r=-.10)

*p<.05

Table 3

Box score review of significance of associations between overall DM and wellbeing

Wellbeing Outcome	Number of Studies	Significance
Trauma Responses		
Post-trauma symptoms	10	----------
Secondary Traumatic Stress	3	---
Post-traumatic growth	4	+++ 0
Negative Psychological Wellbeing Outcomes		
Depression		
Anxiety	7	-------
General mental health symptoms	6	------
Suicidal thoughts/behaviours	2	--
Stress	2	--
Burnout	10	---------0
Compassion fatigue	3	---

	1	/
Positive Wellbeing Outcomes		
Psychological Wellbeing	1	+
Optimism	1	+
Mastery	1	+
Life satisfaction	2	++
Resilience	1	+
Compassion satisfaction	2	++
Overall self-compassion	2	++
Physical wellbeing		
Pain	2	--
Sleep	1	-
Physical symptoms	2	--
Alcohol Use	1	-
Coping Mechanisms		

Cognitive Reappraisal	2	++
Expressive Suppression	2	--
Experiential Avoidance	1	-
Social Support	4	++++
Occupational Experience	6	+00000

Note. + = significant positive association , - = significant negative association, 0 = non-significant result, / = mixed results.

Appendix A

Table A1

Quality Appraisal of Studies

Study	1. Theoretical or conceptual underpinning to the research	2. Statement of research aim/s	3. Clear description of research setting and target population	4. The study design is appropriate to address the stated research aim/s	5. Appropriate sampling to address the research aim/s	6. Rationale for choice of data collection tool/s	7. The format and content of data collection tool is appropriate to address the stated research aim/s	8. Description of data collection procedure	9. Recruitment data provided	10. Justification for analytic method selected	11. The method of analysis was appropriate to answer the research aim/s	12. Evidence that the research stakeholders have been considered in research design or conduct	13. Strengths and limitations critically discussed	Total score
Argentero et al. (2015)	1	2	1	3	1	1	2	1	1	2	2	0	2	19

Chen & Grupe (2021)	2	1	3	3	2	3	3	3	2	1	3	1	2	29
Chen et al. (2019)	3	2	3	2	2	2	3	2	2	3	3	0	2	29
Chen et al. (2021)	3	2	3	3	2	2	3	2	2	3	3	0	1	29
Chopko et al. (2022)	2	3	2	2	1	1	3	3	3	3	3	0	3	29
Chopko & Schwartz (2009)	2	3	3	2	2	3	2	3	1	0	3	0	2	26
Chopko & Schwartz (2013)	1	3	3	2	2	3	3	2	2	0	2	0	2	25

Colgan et al. (2021)	3	3	3	2	1	1	2	1	1	2	3	0	1	23
Counson et al. (2019)	2	3	3	3	3	3	3	3	2	3	2	0	3	33
Fisher et al. (2019)	3	2	2	2	1	0	2	2	2	3	3	1	2	25
Fleischmann et al. (2021)	3	3	3	2	1	3	3	2	1	2	2	0	2	27
Kaplan et al. (2018)	2	2	2	2	1	2	3	2	1	3	3	0	3	26
Huang et al. (2019)	3	3	1	3	1	2	3	1	1	3	3	0	1	25
LeBeaut et al. (2022)	3	3	3	2	2	3	2	3	1	3	3	0	3	31

LeBeaut et al. (2021)	3	2	3	2	3	3	2	2	1	2	3	0	3	29
Lee et al. (2020)	2	3	2	2	1	2	3	2	2	3	2	0	2	26
Márquez et al. (2021)	3	2	3	3	2	1	3	2	2	3	3	1	2	30
McDonald et al. (2022)	3	1	2	2	2	3	3	3	3	2	3	0	3	30
Mitmansgruber et al. (208)	3	3	2	2	2	2	2	1	3	0	3	1	1	25
Senger et al. (2022)	3	2	2	2	3	1	3	3	2	3	3	0	3	30
Serrano et al. (2020)	3	2	2	2	1	3	3	2	2	2	3	0	2	27

Setti & Argentero (2014)	3	3	3	2	2	2	2	3	3	2	3	0	3	31
Smith et al. (2019)	3	3	2	3	1	0	1	2	2	3	3	0	2	25
Smith et al. (2011)	2	3	3	2	1	3	2	2	1	0	2	0	2	23
Stanley et al. (2019)	3	2	2	2	1	3	3	3	2	3	3	0	3	30
Williams et al. (2010)	3	3	3	3	1	2	2	2	3	1	3	0	2	28
Yu et al. (2020)	3	2	3	3	1	1	3	2	2	2	3	0	2	27
Total for each criterion	70	66	67	63	43	55	69	59	50	57	75	4	59	737

Appendix B: Mindfulness Instructions for Authors

Instructions for Authors

Title Page
The title page should include:

The name(s) of the author(s)
A concise and informative title
The affiliation(s) and address(es) of the author(s)
The e-mail address, and telephone number(s) of the corresponding author
If available, the 16-digit ORCID of the author(s)
Abstract

Please provide of structured abstract of up to 250 words

Keywords
Please provide 4 to 6 keywords which can be used for indexing purposes.

Structured Abstract
The structured abstract of up to 250 words with four labeled sections should containing the following, with sub-section headers in bold:

a. Objectives: Problem being addressed in the study
b. Methods: The participants, essential features of the study method
c. Results: The basic findings, including effect sizes and confidence intervals and/or statistical significance levels
d. Conclusions: What the authors conclude from study results

Text Formatting
Manuscripts should be submitted in Word.
Use a normal, plain font (e.g., 12-point Times Roman) for text.
Use italics for emphasis.
Use the automatic page numbering function to number the pages.
Do not use field functions.
Use tab stops or other commands for indents, not the space bar.
Use the table function, not spreadsheets, to make tables.
Use the equation editor or MathType for equations.
Save your file in docx format (Word 2007 or higher) or doc format (older Word versions).

Headings
Please use no more than three levels of displayed headings.

Abbreviations
Abbreviations should be defined at first mention and used consistently thereafter.

Acknowledgments

Acknowledgments of people, grants, funds, etc. should be placed in a separate section on the title page. The names of funding organizations should be written in full.

Footnotes
This journal does not allow the use of footnotes, except in reprinted papers.

Article length
Papers accepted for publication in this journal are 45 double-spaced pages, in 12-point font, inclusive of text, references, tables and figures. For manuscripts exceeding this length, authors should contact the Editors-in-Chief, Christian U. Krägeloh (chris.mind@outlook.co.nz) or Oleg N. Medvedev (oleg.mind@outlook.co.nz).

Terminology
• Please always use internationally accepted signs and symbols for units (SI units).

Scientific style
Generic names of drugs and pesticides are preferred; if trade names are used, the generic name should be given at first mention.
Please use the standard mathematical notation for formulae, symbols etc.:Italic for single letters that denote mathematical constants, variables, and unknown quantities Roman/upright for numerals, operators, and punctuation, and commonly defined functions or abbreviations, e.g., cos, det, e or exp, lim, log, max, min, sin, tan, d (for derivative) Bold for vectors, tensors, and matrices.

References
Cite references in the text by name and year in parentheses. Some examples:
Negotiation research spans many disciplines (Thompson, 1990).
This result was later contradicted by Becker and Seligman (1996).
This effect has been widely studied (Abbott, 1991; Barakat et al., 1995; Kelso & Smith, 1998; Medvec et al., 1999).
Authors are encouraged to follow official APA version 7 guidelines on the number of authors included in reference list entries (i.e., include all authors up to 20; for larger groups, give the first 19 names followed by an ellipsis and the final author's name). However, if authors shorten the author group by using et al., this will be retained.

Reference list
The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications and unpublished works should only be mentioned in the text.
Reference list entries should be alphabetized by the last names of the first author of each work.
Journal names and book titles should be italicized.
If available, please always include DOIs as full DOI links in your reference list (e.g. "https://doi.org/abc").
Journal article Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J. (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the

United States. Psychology of Popular Media Culture, 8(3), 207–217. https://doi.org/10.1037/ppm0000185
Article by DOI Hong, I., Knox, S., Pryor, L., Mroz, T. M., Graham, J., Shields, M. F., & Reistetter, T. A. (2020). Is referral to home health rehabilitation following inpatient rehabilitation facility associated with 90-day hospital readmission for adult patients with stroke? American Journal of Physical Medicine & Rehabilitation. Advance online publication. https://doi.org/10.1097/PHM.0000000000001435
Book Sapolsky, R. M. (2017). Behave: The biology of humans at our best and worst. Penguin Books.
Book chapter Dillard, J. P. (2020). Currents in the study of persuasion. In M. B. Oliver, A. A. Raney, & J. Bryant (Eds.), Media effects: Advances in theory and research (4th ed., pp. 115–129). Routledge.
Online document Fagan, J. (2019, March 25). Nursing clinical brain. OER Commons. Retrieved January 7, 2020, from https://www.oercommons.org/authoring/53029-nursing-clinical-brain/view
Please note:
If you are citing journal articles by their DOI please make sure to also include the volume and page numbers, if already available, e. g. as follows: “Slifka, M. K., & Whitton, J. L. (2000) Clinical implications of dysregulated cytokine production. Journal of Molecular Medicine, 78(2), 74-80. https://doi.org/10.1007/s001090000086”.

Tables
All tables are to be numbered using Arabic numerals.
Tables should always be cited in text in consecutive numerical order.
For each table, please supply a table caption (title) explaining the components of the table.
Identify any previously published material by giving the original source in the form of a reference at the end of the table caption.
Footnotes to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data) and included beneath the table body.

Artwork and Illustrations Guidelines
Electronic Figure Submission
Supply all figures electronically.
Indicate what graphics program was used to create the artwork.
For vector graphics, the preferred format is EPS; for halftones, please use TIFF format. MSOffice files are also acceptable.
Vector graphics containing fonts must have the fonts embedded in the files.
Name your figure files with "Fig" and the figure number, e.g., Fig1.eps.
Line Art

Definition: Black and white graphic with no shading.
Do not use faint lines and/or lettering and check that all lines and lettering within the figures are legible at final size.
All lines should be at least 0.1 mm (0.3 pt) wide.
Scanned line drawings and line drawings in bitmap format should have a minimum resolution of 1200 dpi.
Vector graphics containing fonts must have the fonts embedded in the files.

Halftone Art

Definition: Photographs, drawings, or paintings with fine shading, etc.
If any magnification is used in the photographs, indicate this by using scale bars within the figures themselves.
Halftones should have a minimum resolution of 300 dpi.
Combination Art

Definition: a combination of halftone and line art, e.g., halftones containing line drawing, extensive lettering, color diagrams, etc.
Combination artwork should have a minimum resolution of 600 dpi.

Color Art
Color art is free of charge for online publication.
If black and white will be shown in the print version, make sure that the main information will still be visible. Many colors are not distinguishable from one another when converted to black and white. A simple way to check this is to make a xerographic copy to see if the necessary distinctions between the different colors are still apparent.
If the figures will be printed in black and white, do not refer to color in the captions.
Color illustrations should be submitted as RGB (8 bits per channel).

Figure Lettering
To add lettering, it is best to use Helvetica or Arial (sans serif fonts).
Keep lettering consistently sized throughout your final-sized artwork, usually about 2–3 mm (8–12 pt).
Variance of type size within an illustration should be minimal, e.g., do not use 8-pt type on an axis and 20-pt type for the axis label.
Avoid effects such as shading, outline letters, etc.
Do not include titles or captions within your illustrations.

Figure Numbering
All figures are to be numbered using Arabic numerals.
Figures should always be cited in text in consecutive numerical order.
Figure parts should be denoted by lowercase letters (a, b, c, etc.).
If an appendix appears in your article and it contains one or more figures, continue the consecutive numbering of the main text. Do not number the appendix figures,"A1, A2, A3, etc." Figures in online appendices [Supplementary Information (SI)] should, however, be numbered separately.

Figure Captions
Each figure should have a concise caption describing accurately what the figure depicts.
Include the captions in the text file of the manuscript, not in the figure file.
Figure captions begin with the term Fig. in bold type, followed by the figure number, also in bold type.
No punctuation is to be included after the number, nor is any punctuation to be placed at the end of the caption.

Identify all elements found in the figure in the figure caption; and use boxes, circles, etc., as coordinate points in graphs.
Identify previously published material by giving the original source in the form of a reference citation at the end of the figure caption.
Figure Placement and Size
Figures should be submitted within the body of the text. Only if the file size of the manuscript causes problems in uploading it, the large figures should be submitted separately from the text.
When preparing your figures, size figures to fit in the column width.
For large-sized journals the figures should be 84 mm (for double-column text areas), or 174 mm (for single-column text areas) wide and not higher than 234 mm.
For small-sized journals, the figures should be 119 mm wide and not higher than 195 mm.

Accessibility
In order to give people of all abilities and disabilities access to the content of your figures, please make sure that all figures have descriptive captions (blind users could then use a text-to-speech software or a text-to-Braille hardware)
Patterns are used instead of or in addition to colors for conveying information (colorblind users would then be able to distinguish the visual elements)
Any figure lettering has a contrast ratio of at least 4.5:1

Supplementary Information (SI)
Springer accepts electronic multimedia files (animations, movies, audio, etc.) and other supplementary files to be published online along with an article or a book chapter. This feature can add dimension to the author's article, as certain information cannot be printed or is more convenient in electronic form.

Before submitting research datasets as Supplementary Information, authors should read the journal’s Research data policy. We encourage research data to be archived in data repositories wherever possible.

Submission
Supply all supplementary material in standard file formats.
Please include in each file the following information: article title, journal name, author names; affiliation and e-mail address of the corresponding author.
To accommodate user downloads, please keep in mind that larger-sized files may require very long download times and that some users may experience other problems during downloading.
High resolution (streamable quality) videos can be submitted up to a maximum of 25GB; low resolution videos should not be larger than 5GB.

Audio, Video, and Animations
Aspect ratio: 16:9 or 4:3
Maximum file size: 25 GB for high resolution files; 5 GB for low resolution files
Minimum video duration: 1 sec
Supported file formats: avi, wmv, mp4, mov, m2p, mp2, mpg, mpeg, flv, mxf, mts, m4v, 3gp

Text and Presentations
Submit your material in PDF format; .doc or .ppt files are not suitable for long-term viability.
A collection of figures may also be combined in a PDF file.

Spreadsheets
Spreadsheets should be submitted as .csv or .xlsx files (MS Excel).

Specialized Formats
Specialized format such as .pdb (chemical), .wrl (VRML), .nb (Mathematica notebook), and .tex can also be supplied.

Collecting Multiple Files
It is possible to collect multiple files in a .zip or .gz file.

Numbering
If supplying any supplementary material, the text must make specific mention of the material as a citation, similar to that of figures and tables.
Refer to the supplementary files as “Online Resource”, e.g., "... as shown in the animation (Online Resource 3)", “... additional data are given in Online Resource 4”.
Name the files consecutively, e.g. “ESM_3.mpg”, “ESM_4.pdf”.

Captions
For each supplementary material, please supply a concise caption describing the content of the file.

Processing of supplementary files
Supplementary Information (SI) will be published as received from the author without any conversion, editing, or reformatting.

Accessibility
In order to give people of all abilities and disabilities access to the content of your supplementary files, please make sure that the manuscript contains a descriptive caption for each supplementary material
Video files do not contain anything that flashes more than three times per second (so that users prone to seizures caused by such effects are not put at risk)

Section Two: Empirical Paper

The Relationship Between Emotional Intelligence, Self-Compassion and Wellbeing in Ambulance Staff

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Doctorate in Clinical Psychology

Division of Health Research, Lancaster University

March 2023

Abstract word count: 283

Word count (excluding abstract, references, appendices, tables and figures): 7,314

Prepared in accordance with guidelines for authors for Prehospital Emergency Care (Appendix A)

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Abstract

Objectives

Ambulance staff are at increased risk of negative wellbeing outcomes, though there is a lack of research into their wellbeing. This study aims to explore the relationship between emotional intelligence and self-compassion, two factors related to positive wellbeing in other populations, and the professional quality of life and psychological wellbeing of ambulance staff.

Methods

A within-participants, cross-sectional survey was completed with UK ambulance staff. Data were collected via an anonymous online survey on participants' demographics, emotional intelligence (SREIT), self-compassion (SCS), compassion fatigue and compassion satisfaction (ProQOL), and psychological wellbeing (WEBWBS). The relationships between variables were explored using Pearson's r correlational analyses. Three hierarchical multiple regressions were used to explore the relationships between predictor variables and the outcome variables of compassion fatigue, compassion satisfaction, and psychological wellbeing.

Results

146 ambulance staff completed the survey. Emotional intelligence and self-kindness correlated negatively with compassion fatigue, while self-coldness correlated positively with compassion fatigue; emotional intelligence and self-kindness correlated positively with both compassion satisfaction and psychological wellbeing, and self-coldness correlated negatively with compassion satisfaction and psychological wellbeing. In hierarchical multiple regression analyses, compassion fatigue was significantly predicted by greater self-coldness and years of experience; compassion satisfaction was predicted by greater emotional intelligence and

fewer years of experience; and psychological wellbeing was predicted by greater emotional intelligence and lower self-coldness.

Conclusions

The findings indicated that emotional intelligence and self-coldness can predict aspects of professional and psychological wellbeing in ambulance staff. Self-kindness does not predict wellbeing in models with age, years of experience, emotional intelligence, and self-coldness. This suggests that enhancing emotional intelligence and reducing self-coldness could be targets in interventions to support ambulance staff wellbeing.

Keywords

Ambulance staff; emotional intelligence; self-compassion; compassion satisfaction; compassion fatigue; psychological wellbeing.

Emergency ambulance work is a broad and evolving role. There is a lack of consensus on how emergency ambulance staff roles are described and labelled globally (1), and terms vary across services within the UK. Emergency ambulance crews in the UK typically include a paramedic as the senior clinician, supported by an Emergency Medical Technician (EMT) or Emergency Care Assistant (ECA). UK paramedics are registered with the Health and Care Professions Council (HCPC) and are trained to provide specialist care to patients including administering medication and carrying out certain surgical techniques, while EMTs also have medical training but are not registered clinicians. Emergency ambulance crews provide a wide range of services, such as responding to emergency and routine calls, treating critically ill patients, high-speed driving, liaising with other services, and transporting people to hospital (2).

Granter et al. (3) highlighted that emergency ambulance work is "inherently intense", including a high degree of both physical and emotional intensity. For example, ambulance staff are regularly exposed to traumatic events and occupational stressors including others' distress and death and treating acute illness (4, 5). Ambulance staff also experience stressors, such as a greater level of workplace violence than firefighters (6) and other health care professionals (HCPs), including verbal abuse and physical violence (7), perceived high expectations from the public (8, 9), and a perceived lack of respect from other services (8, 10). In the UK, workplace pressures are heightened by increased demands on ambulance services in recent years, a lack of funding, and staff shortages (2) which can lead to longer hours, concern about the impact of demands on patients, high workload, and lack of breaks (9-11). These factors can have a cumulative negative impact on the wellbeing of ambulance staff. Research suggests that ambulance staff experience high rates of psychological difficulties such as depression, anxiety, post-traumatic stress disorder (PTSD),

and distress (4, 12), while male paramedics in the UK are 75% more likely to take their own life than other HCPs (13). Systematic reviews have found that ambulance staff report higher levels of such difficulties compared with both the general population (14, 15) and other emergency service personnel (16). Negative professional wellbeing outcomes in staff can include burnout - a response to chronic occupational stress characterised by emotional exhaustion, feelings of disconnection or cynicism regarding work, and lack of occupational efficacy (17); and compassion fatigue (CF) - the negative emotional effects, such as low mood, trauma, and a sense of disillusionment or feeling overwhelmed, that can result from caring for traumatized or distressed individuals over time (18, 19). Studies with ambulance staff have found high rates of both burnout and compassion fatigue (10, 20–22). These findings reflect the increased risk of negative wellbeing outcomes for ambulance staff.

The wellbeing of ambulance staff also has implications for ambulance service organisations. One systematic review found burnout to be related to lower empathy in HCPs (23). This was reflected in a study which found that ambulance staff with high levels of burnout reported reduced empathy at work (10), which may impact on their work performance. Poorer wellbeing in ambulance staff has been related to lower job satisfaction, which can increase turnover intention (9). Poorer wellbeing can also lead to increased sickness absence, with paramedics and ambulance support staff consistently having the highest sickness absence rates of any professional group in the National Health Service (NHS), and more days of absence due to psychological difficulties than any other single cause (24). This is costly to services and can further increase pressure on other staff members. However, despite their frequent exposure to highly stressful or traumatic experiences and the subsequent increased risk of negative wellbeing outcomes, there is a lack of research into wellbeing in ambulance staff (15, 25). It is therefore important for

ambulance service organisations and their staff members for research to explore potential psychological mechanisms that affect the wellbeing of ambulance staff in order to facilitate strategies to protect and improve their wellbeing.

Emotional intelligence (EI) is one factor that has been related to wellbeing in other populations. EI has been defined as a broad intelligence incorporating the ability to accurately perceive, understand and reason about emotions, manage the emotions of oneself and others, and use emotions to facilitate thought (26). Systematic reviews and meta-analyses in the general population have found greater EI to be related to better psychological and physical wellbeing (27-29), with studies suggesting it is also related to faster recovery from stress (30) and lower levels of burnout in teachers (31). Greater EI has also been related to better wellbeing in HCPs, predicting fewer symptoms of depression, stress, and anxiety (32, 33) as well as greater life satisfaction, psychological wellbeing, self-esteem, and self-efficacy (34, 35). EI is also related to better professional wellbeing in HCPs, as staff including nurses and doctors with greater EI tend to report lower burnout (36-40) and greater compassion satisfaction (CS) - the positive feelings experienced due to helping others (41). These findings are supported by a longitudinal study where greater EI predicted lower levels of burnout in mental health nurses over two years (42), having a greater effect on burnout than occupational stress, personality traits, or workplace violence. This may benefit health care organisations, as greater EI is associated with higher job satisfaction (39, 43, 44) and indirectly reduced nurses' turnover and intention to leave the role through its positive relationship with wellbeing (45, 46). Thus, individuals who work in health care who have a greater ability to perceive, understand, manage, and use emotions tend to experience better wellbeing and be more satisfied with their role.

While ambulance staff have rarely been included in studies on HCPs' EI, the few studies with ambulance staff suggest a positive relationship between EI and their wellbeing. Greater EI was related to lower levels of emotional exhaustion and greater job satisfaction in 207 EMTs (47), to fewer PTSD symptoms in 55 EMTs and firefighters (48), and to better sleep quality and lower fatigue in a group of 400 health care students which included paramedicine students (49). EI may also be associated with better occupational functioning. In one study, greater EI was related to more rational and intuitive decision-making styles and less dependent or avoidant decision-making in 268 staff including paramedics (50), while in another study, paramedic students with greater EI were more likely to succeed at a field internship (51). Further, 100 paramedicine students who participated in an EI intervention reported improved stress management skills (52), suggesting that training in EI could improve their wellbeing. Therefore, EI may be related to better wellbeing in ambulance staff but, as the research has often been on paramedic students or mixed professional groups, further research is needed to clarify this relationship in ambulance staff.

Self-compassion is another factor that has been positively associated with wellbeing in other populations. Neff (53) defined self-compassion as a way of relating to oneself when experiencing suffering, from uncompassionate "self-coldness" to compassionate "self-kindness" (54). This includes three main aspects: self-kindness, approaching oneself with understanding and comfort versus self-judgement; common humanity, viewing one's suffering as part of the human condition versus feeling isolated; and mindfulness, accepting experiences versus over-identifying with them. In general populations, systematic reviews have found greater self-compassion to be related to better psychological wellbeing and fewer symptoms of depression, stress, and anxiety (55, 56), with studies finding greater self-

compassion to be related to lower levels of the emotional exhaustion aspect of burnout (57, 58). Self-compassion interventions can also reduce symptoms of depression and anxiety and encourage engagement in positive health behaviours (59, 60), indicating that increasing an individual's self-compassion can improve their wellbeing. In HCPs, having greater self-compassion has been related to better professional wellbeing, in terms of lower burnout and CF and greater CS (61–64), and predicted lower burnout and perceived stress in a large study of 1700 doctors, nurses, and medical residents (65). Small-scale intervention studies have found that increases in self-compassion scores following either mindfulness or self-compassion based interventions predicted decreases in burnout, mental health symptoms, secondary traumatic stress, perceived stress, depression, and anxiety (63, 66, 67) and increases in life satisfaction (63) among HCPs. This indicates that taking a compassionate approach to their experiences may protect HCPs against the negative effects of the role on their wellbeing.

Despite the research conducted with HCPs more widely, very little research has been conducted on the relationship between self-compassion and wellbeing in ambulance staff. Two studies found greater self-compassion to be related to greater psychological wellbeing and lower levels of post-traumatic stress, mental health symptoms, and burnout in ambulance staff (6, 68). Research on related concepts in ambulance staff have found that self-acceptance (described as the tendency not to be self-critical) predicted increased resilience (69), and fewer stress-related symptoms, while greater self-criticism was related to greater perceived stress, mental and physical health symptoms, and lower job satisfaction (70). This indicates that the tendency to take a compassionate approach to oneself, rather than being self-critical, may be related to better wellbeing in ambulance staff. However, Mitmansgruber et al. (71) unexpectedly found that greater contempt and

"tough control" regarding one's emotions predicted better psychological wellbeing in a group of 134 experienced paramedics, suggesting that self-compassion was not related to better wellbeing in this group. While Mitmansgruber et al. (71) measured meta-emotions (an individual's emotional reactions to their emotions, such as anger about feeling anxious), rather than measuring self-compassion directly, this could suggest that self-compassion may have a different relationship with wellbeing in ambulance staff than other HCPs.

In summary, current research provides tentative evidence that EI and self-compassion could be related to better wellbeing in ambulance staff. However, the lack of research focusing solely on ambulance staff and the mixed evidence regarding self-compassion limits the conclusions that can be made about the relationships between these concepts and wellbeing in ambulance staff. This study therefore aims to explore the relationships between EI and both the self-coldness and self-kindness aspects of self-compassion and the psychological wellbeing and professional quality of life of ambulance staff. Understanding these relationships could aid ambulance services in finding ways to appropriately support staff wellbeing and quality of life, for example by incorporating EI or self-compassion into training and interventions developed for ambulance staff. This could thus support ambulance services in the UK to meet recommendations from Health Education England (72), NHS England (73), and their own commitments (74) to improve staff wellbeing.

The outcomes explored in this study will include professional quality of life (CF and CS) as these outcomes were the most frequently studied in other HCPs, allowing for future comparison between professional groups. Psychological wellbeing will also be explored as a positive wellbeing outcome. The inclusion of positive wellbeing measures may give a more

holistic understanding of the impact of EI and self-compassion on wellbeing as wellbeing is not just the absence of difficulties, but includes positive aspects (75).

It is hypothesised that:

H1: Greater levels of EI will be associated with higher levels of perceived psychological wellbeing and CS, and lower levels of CF in ambulance staff.

H2: Greater levels of self-kindness will be associated with higher levels of perceived psychological wellbeing and CS, and lower levels of CF in ambulance staff.

H3: Greater levels of self-coldness will be associated with lower levels of perceived psychological wellbeing and CS, and higher levels of CF in ambulance staff.

H4: When combined in regression models, EI, self-kindness, and self-coldness scores will each contribute unique variance to the prediction of psychological wellbeing, CS and CF in ambulance staff.

Therefore, the question the study aims to answer is: What is the relationship between EI, self-compassion, and professional and psychological wellbeing in ambulance staff?

Methods

Participants

Participants were staff who work on emergency ambulances for the NHS and had patient contact in this role. Broad inclusion criteria were used to allow the sample to be as representative as possible of the ambulance workforce. Inclusion criteria were that participants:

- Were staff members who worked on NHS emergency ambulances in any role.
- Had patient contact in the above role.
- Were working age adults, aged 18 and over.

A sample size of at least 92 to 98 participants was sought. This was based on a regression model including five to six predictor variables and based on a medium effect size with power of 0.8 and alpha level of p = .05. A medium effect size for the regression model (0.15) was chosen as medium effect sizes have been found in research which explored the relationship between wellbeing and EI (42, 43) and wellbeing and self-compassion (61, 65) in other HCPs. The final sample size of 146 therefore met this criterion.

Study Design

This study used quantitative methods. A within-participants, cross-sectional design was utilised to explore the relationship between EI, self-compassion, and wellbeing in ambulance staff. Data were collected via an anonymous online survey at one time point. Data were analysed using Pearson's r correlational analyses and hierarchical multiple regressions to explore the relationships between variables. Stakeholders including research paramedics and ambulance staff were consulted on the study design and participant documents and piloted the questionnaires to check the acceptability and ease of completion of the questionnaires and to confirm the proposed time taken to complete the survey.

Materials

Participants were asked to provide demographic information including their gender, ethnicity, age, job role, and years of experience working on emergency ambulances.

Self-Report Emotional Intelligence Test

The Self-Report Emotional Intelligence Test (SREIT; 76) was used to measure EI. This is a 33-item measure, with responses to each item scored from 1 (Strongly disagree) to 5 (Strongly agree), for example "I know why my emotions change." Higher scores indicate higher levels of EI. The SREIT is a widely used measure of EI (77) which has been found to have good internal reliability (α = .90), test-retest reliability, and convergent and

discriminant validity (76). It has also been found to have good internal reliability in its use with other HCPs (α = .84 to .92; 33, 41). Schutte et al. (76) suggested categorising scores of 33-110 as 'unusually low' EI, scores of 111-137 as 'average' and scores of 138-165 as 'unusually high'.

While some researchers suggest a four-factor structure is a better fit for the data than a one factor model (78), this has not been supported in other studies (79-81). Therefore, the total EI score was used to analyse data in the current study.

Self-Compassion Scale

The Self-Compassion Scale (SCS; 82) is a widely used measure of self-compassion. This is a 26-item questionnaire, with responses scored from 1 (Almost never) to 5 (Almost always), for example "I try to be loving towards myself when I'm feeling emotional pain." A two-factor structure was used in the study, suggested by previous research to be the best fit for the data (83-86). The first factor, termed "self-kindness" to differentiate it from overall self-compassion, incorporates the compassionate subscales of self-kindness, mindfulness, and common humanity. The second factor, termed "self-coldness", combines the uncompassionate subscales of self-judgement, over-identification, and isolation. Higher scores indicate higher reported levels of each aspect of self-compassion. While there are no specified cut-offs, is it suggested that average scores of 1-2.49 indicate low self-kindness or self-coldness, 2.5-3.49 indicates moderate levels and 3.5-5.0 indicates high levels (53).

The SCS has been found to have good test-retest reliability and construct, convergent, and discriminant validity (82), with good reliability and validity in a range of populations (87), including participants from a variety of HCP backgrounds (61). Good internal reliability has been found for both the self-kindness (α = .86 to .91) and self-coldness (α = .89 to .94) factors (83, 85, 86).

Professional Quality of Life Scale

The Professional Quality of Life Scale (ProQOL-21; 88) was used to measure professional wellbeing. The ProQOL-21 is an alternative method of scoring the 30-item ProQOL-5 (89) in response to issues with the construct validity of the ProQOL-5. This measure gives two scores: CS, measured with ten items, and CF, using eleven items. Responses are scored from 1 (Never) to 5 (Very often), for example "I get satisfaction from being able to help people." Higher scores indicate higher reported CS and CF.

The ProQOL-5 was developed for use with people in caring or helping professions and has been used extensively in research (88). Heritage et al. (88) found that the revised scales in the ProQOL-21 had good internal reliability (α = .90 for CF, α = .92 for CS) and construct validity. Heritage et al. (88) recommend cut-off scores of 21 and 30 for low and high CS, and 16 and 25 for low and high CF.

Warwick-Edinburgh Mental Wellbeing Scale

The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS; 90) is a 14-item scale of subjective psychological wellbeing. Responses are scored from 1 (None of the time) to 5 (All of the time) to provide an overall wellbeing score, for example "I've been feeling useful". Higher scores indicate higher reported psychological wellbeing.

Tennant et al. (90) found good internal reliability in both student (α = .89) and general populations (α = .91), good test-retest reliability, and good face and content validity. The WEMWBS has been validated with large samples of adults in the UK and across cultures (91) and has been used with other HCPs (α = .93; 92).

Procedure

Two NHS ambulance services in the UK were approached to participate in the study and agreed to advertise the study through their internal staff communications. The College

of Paramedics was also approached and agreed to advertise the study in their newsletter. Snowballing techniques were used to recruit further participants. For example, participants were able to share the survey link with colleagues in other services and on relevant social media groups. Recruitment took place between 22nd April and 30th September 2022.

Staff members who chose to participate accessed an online survey on the Qualtrics website via the link provided. The survey began with the participant information sheet which provided further details about the study and the use of their data. This also included a consent statement to confirm participants fully understood the information, consented for their data to be used in the research, and that they met the inclusion criteria. They were then presented with the survey questionnaires and finally a debrief sheet. The survey was estimated to take 20-30 minutes to complete (See Ethics Section for participant sheet, questionnaires and debrief sheet).

Ethical Approval

The Lancaster University Faculty of Health and Medicine Research Ethics Committee granted ethical approval (FHMREC21002). Research governance approval was obtained through the Health Research Authority (HRA) Integrated Research Application System (Project ID: 303396) and research and development approval was obtained from the NHS Trusts who participated in the study (see Ethics Section for details).

Data Analysis

Data analysis was completed using SPSS version 27. Questionnaires were scored in accordance with scale instructions and reverse coded as necessary. Chi-squared goodness-of-fit tests and an independent samples t-test were completed to explore differences in demographics and SREIT score between those who completed the full survey and those who did not. Descriptive statistics for demographics and study variables were explored to

understand sample characteristics and Cronbach's alphas for the study variables were calculated to assess their internal consistency in the sample.

For correlation analyses, data were checked for outliers and normality of distribution. Histograms and Q-Q plots of the variables were visually inspected, and their skew and kurtosis were examined. These were within acceptable parameters, thus parametric methods (Pearson's r correlational analyses) were used to analyse correlations between demographic variables (age and years of experience), EI, self-compassion, CF, CS, and psychological wellbeing. Sensitivity analyses were conducted excluding the one participant with an outlying value on the SREIT, but this did not significantly affect the results, so they were included in the analyses.

Three hierarchical multiple regressions were used to explore the relationships between predictor variables and the three outcome variables: CF, CS, and psychological wellbeing. Assumptions of independence of residuals were met as assessed by Durbin-Watson statistics. Examination of VIF and tolerance values confirmed no evidence of multicollinearity in the data. Visual inspection of histograms and P-P plots suggested that the assumptions of homoscedasticity and normally distributed residuals were met. No participants were identified as having standardised residuals above three, suggesting no participant was biasing the model. Following previous research, demographic variables that were significantly correlated with at least one outcome variable were entered in the first block. As prior research suggests a stronger role for EI than self-compassion in the wellbeing of ambulance staff, EI was entered in the next block, with self-compassion variables being entered last. Self-kindness and self-coldness were entered separately, in order to explore the predictive value of these subcomponents of self-compassion.

Results

A total of 169 participants consented to take part in the study and began the survey. There were 146 surveys completed in full, while 11 participants completed the demographics questions only and a further 12 completed the demographics questions and the SREIT. In those who competed the survey, there was a slightly lower proportion of males and people in the youngest age group, and a higher proportion of paramedics, compared to those who did not complete it, though these differences were not statistically significant ($p > .05$). No significant difference was seen in EI between the completers and non-completers ($t(156) = -1.140$, $p = .256$). Therefore, only the data of the 146 participants who completed the survey in full were used in the rest of the analyses.

Sample Characteristics

The demographic characteristics of the sample are presented in Table 1. Most were female (*N* = 91; 62.3%), with 54 males (37.0%), and one person identifying as non-binary (0.7%). The majority identified as White British (*N* = 137; 93.8%). More participants were in the 25-34 year age group than any other (*N* = 54; 37.0%) and most had 1-5 years of experience working on emergency ambulances (*N* = 60; 41.1%). Most participants were paramedics, including specialist paramedics (*N* = 82; 56.2%), followed by EMTs (*N* = 32; 21.9%).

[Table 1 here]

Descriptive Statistics

Descriptive statistics and Cronbach's α coefficients for the variables are provided in Table 2. All measures demonstrated high levels of internal consistency, with Cronbach's α over 0.8.

[Table 2 here]

The mean EI score was at the lower end of the 'average' range of EI (76). This was slightly lower than mean scores in studies with other HCPs (41, 93) and first responders, including EMTs (94), police officers (95), and firefighters (96), though similar to a study of police officers in Malaysia (97).

The mean self-kindness score is at the low end of 'moderate' self-kindness, slightly lower than in previous studies with EMTs (68), firefighters (98), and police (99). The mean self-coldness score indicates 'high' self-coldness (53), similar to scores previously reported in EMTs (68), but higher than those in firefighters (98) and other HCPs (61, 64).

The ProQOL scores indicate high levels of both CS and CF. CS and CF scores vary in the literature, with the current mean CS score similar to other ambulance staff and first responders in some studies (20, 22), while either slightly lower (100) or higher (101) than paramedics in other studies. Participants reported higher CF than ambulance staff in other studies (20, 100, 101).

The mean WEMWBS score reflected similar scores to ambulance staff and first responders in some previous research (68, 102, 103), though reflected slightly lower scores than ambulance staff and first responders in other studies (14, 104).

Correlational Analyses

Pearson's r correlations between variables are shown in Table 3.

[Table 3 here]

All psychological variables were significantly correlated in the expected directions. CF had a small negative correlation with EI (r = -.224, p < .01) and self-kindness (r = -.251, p < .01), with a moderate positive correlation with self-coldness (r = .368, p < .01). CF also had a small positive correlation with years of experience (r = .169, p < .05), but did not correlate significantly with age. CS had a strong positive correlation with EI (r = .540, p < .01), a

moderate positive correlation with self-kindness (r = .414, p < .01) and moderate negative correlation with self-coldness (r = -.378, p < .01), and did not significantly correlate with age or years of experience. Psychological wellbeing had strong positive correlations with EI (r = .526, p < .01) and self-kindness (r = .607, p < .01) and a strong negative correlation with self-coldness (r = -.654, p < .01). Psychological wellbeing also had a small positive correlation with age (r = .202, p < .05), but did not correlate significantly with years of experience.

Hierarchical Multiple Regression Analyses

Three hierarchical multiple regression analyses were conducted to examine the variance explained by the predictor variables for CF, CS, and psychological wellbeing scores. Independent samples t-tests found no significant differences between males and females on the outcome variables (p > .05), therefore gender was not included in regression models. As age and years of experience were both significantly correlated with at least one outcome variable, they have been included in all models for consistency. Predictor variables were entered into the regression model in three blocks: (a) demographic variables (age, years of experience); (b) EI score; (c) self-compassion scores (self-kindness, self-coldness).

Compassion Fatigue

At step 1, age (β = -.290, p = .004) and years of experience (β = .340, p = .001) significantly predicted CF. At step 2, age (β = -.255, p = .010), years of experience (β = .320, p = .001) and EI (β = -.195, p = .015) were statistically significant predictors of CF. However, when self-compassion variables were entered at step 3, age (β = -.118, p = .254) and EI (β = -.094, p = .331) were no longer significant. At step 3, only self-coldness (β = .392, p = .001) and years of experience (β = .295, p = .002) positively predicted CF. Self-kindness was not a significant predictor (β = .102, p = .339). This indicates that higher levels of self-coldness and greater years of experience predict greater CF. The overall model was significant (F (5, 140)

= 7.011, $p < .001$), explaining 17.2% of the variance in CF scores *(*$R^2 = .200$, adjusted $R^2 = .172$). The results are summarised in Table 4.

[Table 4 here]

Compassion Satisfaction

At step 1, age (β = .284, $p = .005$) and years of experience (β = -.259, $p = .011$) significantly predicted CS. At step 2, age (β = .193, $p = .027$), years of experience (β = -.207, $p = .017$), and EI (β = .518, $p < .001$) were significant predictors of CS. However, when self-compassion variables were entered at step 3, age was no longer significant (β = .133, $p = .161$). In the final model, EI (β = .460, $p < .001$) and years of experience (β = -.193, $p = .027$) were significant predictors of CS score, indicating that having greater EI and fewer years of experience predicted greater CS. Neither self-kindness (β = .003, $p = .979$) nor self-coldness (β = -.140, $p = .171$) significantly predicted CS. The overall model was significant (F (5, 140) = 14.248, $p < .001$), explaining 31.4% of the variance in CS scores ($R^2 = .337$, adjusted $R^2 = .314$). The results are summarised in Table 5.

[Table 5 here]

Psychological Wellbeing

At step 1, age (β = .344, $p = .001$) and years of experience (β = -.242, $p = .016$) significantly predicted psychological wellbeing. At step 2, age (β = .257, $p = .003$), years of experience (β = -.193, $p = .026$), and EI (β = .496, $p < .001$) were significant predictors of psychological wellbeing. However, when self-compassion variables were entered at step 3, age (β = .014, $p = .886$) and years of experience (β = -.127, $p = .088$) were no longer significant. In the final model, only EI (β = .219, $p = .004$) and self-coldness (β = -.462, $p < .001$) were significant predictors, indicating that having greater EI and lower self-coldness predicted greater psychological wellbeing. Self-kindness was not a significant predictor of

psychological wellbeing score (β = .151, p = .109). The overall model was significant (F (5, 140) = 29.996, p < .001), explaining 50.0% of the variance in psychological wellbeing scores (R^2 = .517, adjusted R^2 = .500). The results are summarised in Table 6.

[Table 6 here]

Discussion

The aim of the study was to explore the relationships between EI and self-compassion and the professional quality of life and psychological wellbeing of ambulance staff. The hypotheses that greater EI and self-kindness and lower self-coldness would be associated with greater psychological wellbeing and CS and lower CF were supported, with all variables significantly correlated in the expected directions. The hypotheses that EI and both self-compassion variables would significantly and independently predict psychological wellbeing, CS, and CF were not fully supported. The overall regression models for each outcome variable were significant, but for CF, only years of experience and self-coldness were significant predictors; for CS, only years of experience and EI were significant predictors; and for psychological wellbeing only EI and self-coldness were significant predictors. This suggests that EI, self-kindness, and self-coldness have differential importance to the professional and psychological wellbeing of ambulance staff.

In the current study, high levels of CF were indicated in the sample, which may be accounted for by data collection occurring during the COVID-19 pandemic, as HCPs working during this time have reported increased CF (105). In the regression model, both years of experience and self-coldness positively predicted CF, with self-coldness as the best predictor. This supports previous research which found self-coldness to predict CF in HCPs. For example, self-coldness was a better predictor of CF than self-care, mindfulness, and capacity to cope with death in palliative care staff (106), while only the self-judgement and

over-identification aspects of the self-coldness factor predicted CF in HCPs (107). Further, self-criticism predicted CF while total self-compassion did not in people in helping professions (100). Self-coldness being related to greater CF may be due to self-coldness amplifying the pain and distress experienced when faced with others' suffering (53), overwhelming the individual's ability to cope with this stress over time (108). The findings also support research with ambulance staff and HCPs which found CF to increase with years of experience (63, 100, 109), suggesting that CF may increase over time in caring roles. In this study, while EI was negatively correlated with CF, it did not significantly predict CF when in a model with self-coldness. There is a lack of research on EI and CF in ambulance staff, though Maillet & Read (110) found that only the perception and utilisation of emotions aspects of EI, but not managing emotions, predicted lower CF in HCPs. Additionally, Zeidner et al. (40) found that total EI did predict lower CF in HCPs, but (along with emotion management skills) only explained 8% of the variance. Thus, it may be that EI has a small effect on CF, but that self-coldness is more relevant to CF when both are included in a model.

The final model only accounted for 17.2% of the variance in CF, suggesting that important predictors were not included. Workplace factors, including longer hours, violence, traumatic events, high workload, lack of support from supervisors, and lack of autonomy predict greater CF in ambulance staff and other HCPs (20, 105, 107, 110-112), while psychological factors related to greater CF include negative affect, psychological inflexibility, and PTSD symptoms (21, 40, 63, 107, 112). Therefore, it may be valuable to include a broader range of occupational and psychological variables in future research into CF in ambulance staff.

CS was predicted by greater EI, supporting other studies which found greater EI to be related to CS in other HCPs (41, 110). This suggests that staff who are able to perceive and manage the emotions of themselves and others are more satisfied with their caring role, consistent with the theory that those with greater EI will be more able to regulate their emotions effectively and thus experience positive mental health outcomes (26). Neither self-kindness nor self-coldness predicted CS. Previous research with HCPs has found self-coldness either to make a very small contribution to CS scores (61) or to not predict CS (107), when taking account of other variables such as sense of vocation (61), empathy, and engagement with work (107). This suggests that staff's tendency to be cold towards themselves may not affect their tendency to be satisfied with their caring role as much as their empathy for others and job satisfaction. This may be because compassion satisfaction can be achieved from focusing on others and being able to alleviate patient suffering (89), thus may be less influenced by the approach a staff member takes towards themselves (107). Further, while years of experience was not significantly correlated with CS, it negatively predicted CS once age was controlled for. Previous research has not found an association between years of experience and CS in ambulance staff (20, 111), though these studies did not control for age. As CS has been found to be lower in frontline HCPs working during the pandemic (113), it may be valuable for future research to explore the relationship between age, years of experience and CS to examine whether the findings of the current study are replicated over time.

The finding that EI positively predicted psychological wellbeing is consistent with previous research in other HCPs (114), supporting theoretical understandings that EI has a positive effect on an individual's overall wellbeing (26, 115). Research indicates that EI is related to positive wellbeing outcomes in areas including mental health, subjective

wellbeing, life satisfaction, happiness, self-efficacy, and self-esteem (27, 28, 35, 116, 117); current findings provide tentative evidence that this relationship may also occur in ambulance staff. Self-coldness also negatively predicted psychological wellbeing, aligned with literature which found self-coldness to be inversely related to a range of positive wellbeing outcomes, including life satisfaction, positive affect, optimism, self-esteem, self-acceptance, and self-efficacy (84, 118, 119). This suggests that approaching one's experiences with judgement, a sense of isolation, and over-identification with the experience is related to lower wellbeing, as this can exacerbate the negative effects of unpleasant experiences, leading to difficulty accepting and regulating difficult emotions, thus to poorer wellbeing (53).

It was surprising that self-kindness did not predict CF, CS, or psychological wellbeing when entered into the models with EI and self-coldness, despite being significantly correlated with these variables. This may be partly due to the nature of ambulance work. In one study, Mitmansgruber et al. (71) found that, in paramedics, higher "tough control" and contempt for emotions predicted greater psychological wellbeing, while compassion for one's emotions predicted lower wellbeing. It was suggested that "tough self-discipline" may support wellbeing in the short-term by allowing staff to put their own feelings aside in order to help others in distressing circumstances, while compassionately engaging in the moment could reduce their sense of wellbeing, though the long-term effects of this are unclear and the study did not include CF or CS. In the general population, while research has found self-compassion to be related to greater CS (63), lower CF (100, 120), and better overall wellbeing (55, 56), much of this research only used total self-compassion scores and thus cannot determine the relative contribution of self-kindness and self-coldness (121). Research that has separated these aspects found that while self-coldness has a stronger

relationship with a range of negative wellbeing outcomes than self-kindness (84, 86, 119, 122), results are mixed for positive wellbeing outcomes, with self-kindness and self-coldness often being similarly predictive (84, 86, 119). Further, interventions based on self-compassion tend to have a greater effect on reducing self-coldness than increasing self-kindness, as well as improving wellbeing (60, 123). These previous findings indicate that vulnerability to negative wellbeing outcomes arising from the tendency towards self-coldness may be more important in predicting a range of wellbeing outcomes than a protective effect of self-kindness. This may explain why self-kindness was not predictive of professional or psychological wellbeing in this study.

Clinical Implications

The findings of the current study have potential implications for ambulance services in supporting staff wellbeing. Self-coldness was related to greater CF and lower wellbeing in ambulance staff. Self-coldness may be promoted by a "blame culture" reported in ambulance services (3). Thus, a more compassionate culture in ambulance services may decrease self-coldness and support staff wellbeing by reducing a sense of self-judgement engendered by perceived lack of compassion and support from management (7, 10), and feelings of isolation stemming from a perceived pressure to suppress emotions and discouragement from seeking support (8, 124). Compassionate leadership is related to better wellbeing in ambulance staff (14, 125-127), is valued by staff (5), and is identified as a key aim by the NHS (125). Compassionate leadership may also benefit services more widely, having been related to better patient outcomes (127). Though changing the culture of ambulance services to promote staff wellbeing may be a longer-term aim, individual leaders and services can contribute to this by, for example, creating space for staff to contribute and

share in decision-making, listening with curiosity to their difficulties (126), and taking a non-judgemental, empathetic and respectful approach to engaging with staff (5, 125).

Further, as greater EI predicted both CS and wellbeing, services may promote wellbeing by supporting staff to enhance their EI. Ambulance staff have reported that a lack of formal support or reflection time following potentially traumatic calls led to increased distress and tendency to suppress their emotions (5, 8, 10). Therefore, one way to allow staff to gain insight and awareness into their emotions may be to provide reflective spaces post-incident. It may also be beneficial to ensure teams have space to reflect together on the impact of the work more generally, such as in Schwartz Rounds (126).

The finding that self-kindness did not predict wellbeing indicates that interventions just focusing on increasing self-kindness may not be as relevant to ambulance staff wellbeing. Therefore, it may be beneficial to develop interventions and coping strategies focusing on the particular needs of ambulance staff in co-production with staff (124) as there is currently inconsistent access to psychological support (128), despite staff's expressed desire for access to such support (5, 10). Support could involve strategies to enhance EI, for example training on how to respond to others' distress (8) and to recognise and manage one's own distress (5). It could also involve reducing self-coldness, for example by reducing stigma around help-seeking (5) and reducing a sense of isolation by enabling sharing of experiences (11). Clinical psychologists may be well-placed to facilitate the development of such interventions, with key skills in co-production, such as values-based leadership, openness, collaboration, and creating safe environments (129), and the ability to use psychological knowledge to design and implement services which enhance wellbeing (130). Further research could then be conducted into the effects of these service changes and interventions on ambulance staff wellbeing.

Limitations and Future Research

This study has several limitations. First are limitations regarding the sample. Only ambulance staff currently working in patient-facing roles were included. Staff in active employment may be those who experience better wellbeing than those who are on sick leave or have left the profession, which may bias the results by excluding those with poorer wellbeing. In the sample, females and people under 35 years of age were over-represented as compared to the UK ambulance staff population (131). While study variables did not differ by gender, age had an effect on some variables and thus the higher proportion of younger people could have influenced the results and so may not generalise to other UK ambulance populations. Further, data was collected during a pandemic, which may have negatively influenced staff perceptions of their wellbeing and professional quality of life due to increased stressors. Therefore, it may be beneficial to replicate the study to explore whether these relationships are consistent over time, and to compare findings to staff who have retired, left the profession, or are on long-term sick leave. It may also be beneficial to use more purposive sampling to ensure the sample is representative of the ambulance staff population with regards to demographic variables.

Second, data were self-report, cross-sectional, and collected anonymously. This means that it was not possible to calculate the number of people invited who chose not to participate or to explore reasons for not completing the survey, for example whether participation and completion of the survey indicated better or poorer wellbeing. The use of self-report measures could bias the results if individuals have little awareness of their own EI and self-compassion or do not feel able to disclose lower wellbeing due to stigma (8). The anonymous design was utilised to ameliorate the latter problem. Additionally, causation between EI and self-compassion and the wellbeing variables cannot be determined due to

the cross-sectional nature of the study. For example, rather than EI and self-compassion leading to better wellbeing, it may be that ambulance staff who have greater professional quality of life and psychological wellbeing are more able to recognise and manage their emotions and approach their experiences more compassionately. Thus, longitudinal research exploring the relationships between EI, self-compassion, and wellbeing would be valuable in clarifying the relationships between these factors over time.

Additionally, it was difficult to directly compare the psychological wellbeing findings to other research, due to the wide range of tools used to measure wellbeing. This may be partly due to studies using different conceptualisations of wellbeing. Future research which more clearly delineates the aspect of wellbeing being studied would help to elucidate these relationships.

Finally, the number of variables included was limited to reduce participant burden. However, the small amount of variance explained by the CF regression model suggests there are important factors that were not included. Future research could include a broader range of factors hypothesised to be important in ambulance staff wellbeing, such as occupational stressors and traumatic experiences, which have been associated with increased CF (20, 109). Clark et al. (25) highlight the lack of research into ambulance staff wellbeing and note several possible avenues of research, such as risk factors for suicide, wellbeing of students and new recruits, length of experience and operational versus non-operational roles as moderators, and intervention studies. Qualitative research may thus allow staff to highlight important factors in their wellbeing to focus on in future research.

A further avenue for future research may be into the relationship between EI and self-compassion in ambulance staff, and HCPs more widely, as this is currently lacking. Neff (53) proposed that self-compassion should be positively related to EI, as both are related to

the ability to observe one's emotions and use this to effectively inform thoughts and behaviours. One study found a positive relationship between EI and self-compassion in nurses (132), though further research exploring this relationship may help to determine the effects of both on wellbeing in staff.

Conclusion

The current study examined the relationships between EI, self-compassion, and wellbeing in ambulance staff. The findings suggest that greater EI and self-kindness, and lower self-coldness, are related to better professional quality of life and psychological wellbeing. Hierarchical multiple regression was used to examine the extent to which demographic and psychological variables predicted these aspects of wellbeing. CF was predicted by higher self-coldness and years of experience, CS was predicted by greater EI and fewer years of experience, and psychological wellbeing was predicted by greater EI and lower self-coldness. Despite limitations, this study is the first to consider both EI and self-compassion in relation to the professional and psychological wellbeing of ambulance staff and highlights the significant relationship EI and self-coldness have with wellbeing. This may have implications for the leadership of ambulance services and interventions developed to support staff wellbeing. Further research would be beneficial in determining the longitudinal relationships between these variables, their relationships in ambulance staff who are not in active employment, and other variables which may influence ambulance staff wellbeing, including occupational and psychological factors.

References

1. Williams B, Beovich B, Olaussen A. The definition of paramedicine: An international delphi study. Journal of Multidisciplinary Healthcare. 2017;14:3561-3570. https://doi.org/10.2147/JMDH.S347811

2. NHS Providers. The ambulance service: Understanding the new standards. UK; 2019. https://nhsproviders.org/the-ambulance-service-understanding-the-new-standards

3. Granter E, Wankhade P, McCann L, Hassard J, Hyde P. Multiple dimensions of work intensity: Ambulance work as edgework. Work, Employment and Society. 2019;33(2):280-297. https://doi.org/10.1177/0950017018759207

4. Davis K, Macbeth A, Warwick R, Chan S. Posttraumatic stress symptom severity, prevalence and impact in ambulance clinicians: The hidden extent of distress in the emergency services. Traumatology. 2019;25(4);282–288. http://dx.doi.org/10.1037/trm0000191

5. Lawn S, Roberts L, Willis E, Couzner L, Mohammadi L, Goble E. The effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel: A systematic review of qualitative research. BMC Psychiatry. 2020;20(1). https://doi.org/10.1186/s12888-020-02752-4

6. Setlack J. Workplace violence and mental health of paramedics and firefighters [Unpublished master's thesis]. Winnipeg (Canada): University of Manitoba; 2019.

7. NHS England. NHS staff survey national results 2021. UK; 2022. https://www.nhsstaffsurveys.com/results/national-results/

8. Nelson PA, Cordingley L, Kapur N, Chew-Graham CA, Shaw J, Smith S, McGale B, McDonnell S. 'We're the first port of call'–Perspectives of ambulance staff on responding to deaths by suicide: A qualitative study. Frontiers in Psychology. 2020;11(722). https://doi.org/10.3389/fpsyg.2020.00722

9. Wankhade P. Staff perceptions and changing role of pre-hospital profession in the UK ambulance services: An exploratory study. International Journal of Emergency Services. 2016;5(2):126–144. https://doi.org/10.1108/ IJES-02-2016-0004

10. Beldon R, Garside J. Burnout in frontline ambulance staff. Journal of Paramedic Practice. 2022;14(1);6-14. https://doi.org/10.12968/jpar.2022.14.1.6

11. Clompus S, Albarran J. Exploring the nature of resilience in paramedic practice: A psycho-social study. International Emergency Nursing. 2016;28*:*1–7. https://doi. org/10.1016/j.ienj.2015.11.006

12. Bennett P, Williams Y, Page N, Hood K, Woollard M, Vetter N. Associations between organizational and incident factors and emotional distress in emergency ambulance personnel. British Journal of Clinical Psychology. 2005;44(2):215-226. https://doi.org/10.1348/014466505X29639

13. Office for National Statistics. Suicide by occupation, England: 2011 to 2015. UK; 2017. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/suicidebyoccupation/england2011to2015

14. Petrie K, Milligan-Saville J, Gayed A, Deady M, Phelps A, Dell L, Forbes D, Bryant RA, Calvo RA, Glozier N, Harvey SB. Prevalence of PTSD and common mental disorders amongst ambulance personnel: A systematic review and meta-analysis. Social Psychiatry and Psychiatric Epidemiology. 2018;53:897-909.https://doi.org/10.1007/s00127-018-1539-5

15. Wagner SL, White N, Regehr C, White M, Alden LE, Buys N, Carey MG, Corneil W, Fyfe T, Matthews LR, Randall C. Ambulance personnel: Systematic review of mental health symptoms. Traumatology. 2020;26(4):370–387. https://doi.org/10.1037/trm0000251

16. Berger W, Coutinho ES, Figueira I, Marques-Portella C, Luz MP, Neylan TC, Marmar CR, Mendlowicz MV. Rescuers at risk: a systematic review and meta-regression analysis of the

worldwide current prevalence and correlates of PTSD in rescue workers. Social Psychiatry and Psychiatric Epidemiology. 2012;47:1001-1011. https://doi.org/10.1007/s00127-011-0408-2

17. Maslach CH, Schaufeli WB, Leiter MP. (2001). Job burnout. Annual Review of Psychology. 2001;52(1);397-422. https://doi.org/10.1146/annurev.psych.52.1.397

18. Figley CR. Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized. New York (NY): Brunner/Mazel; 1995.

19. Sorenson C, Bolick B, Wright K, Hamilton R. Understanding compassion fatigue in healthcare providers: A review of current literature. Journal of Nursing Scholarship. 2016;48(5):456-465. https://doi.org/10.1111/jnu.12229

20. Dehghannezhad J, Zamanzadeh V, Gilani N, Rahmani A, Dadashzadeh A. Compassion satisfaction and compassion fatigue among emergency medical technicians in Iran. Australasian Journal of Parmedicine. 2020;17:1-7. https://doi.org/10.33151/ajp.17.642

21. Koohsari E, Darban F, Safarzai E, Kordi M. Understanding the effect of post-traumatic stress on the professional quality of life of pre-hospital emergency staff. Emergency Nurse. 2022;30(6):33-40. https://doi.org/10.7748/en.2021.e2073

22. Zaidi SM, Yaqoob N, Saeed H. Compassion satisfaction, secondary traumatic stress and burnout among rescuers. Journal of Postgraduate Medical Institute. 2017;31(3):314-318.

23. Williams B, Lau R, Thornton E, Olney LS. The relationship between empathy and burnout–lessons for paramedics: A scoping review. Psychology Research and Behavior Management. 2017;27:329-337. https://doi.org/10.2147/PRBM.S145810

24. NHS Digital. NHS sickness absence rates. UK; 2022. https://digital.nhs.uk/data-and-information/publications/statistical/nhs-sickness-absence-rates

25. Clark LV, Fida R, Skinner J, Murdoch J, Rees N, Williams J, Foster T, Sanderson K. Mental health, well-being and support interventions for UK ambulance services staff: An evidence map, 2000 to 2020. British Paramedic Journal. 2021;5(4):25-39. https://doi.org/10.29045/14784726.2021.3.5.4.25

26. Mayer JD, Salovey P. What is emotional intelligence? In: Salovey P, Sluyter D, editors. Emotional development and emotional intelligence: Educational implications. New York (NY): Basic Books; 1997. p. 3-34).

27. Martins A, Ramalho N, Morin E. A comprehensive meta-analysis of the relationship between emotional intelligence and health. Personality and Individual Differences. 2010;49(6):554-564. https://doi.org/10.1016/j.paid.2010.05.029

28. Sánchez-Álvarez N, Extremera N, Fernández-Berrocal P. The relation between emotional intelligence and subjective well-being: A meta-analytic investigation. The Journal of Positive Psychology. 2016;11(3):276-285. https://doi.org/10.1080/17439760.2015.1058968

29. Schutte NS, Malouff JM, Thorsteinsson EB, Bhullar N, Rooke SE. A meta-analytic investigation of the relationship between emotional intelligence and health. Personality and Individual Differences. 2007;42(6):921-933. https://doi.org/10.1016/j.paid.2006.09.003

30. Lea RG, Davis SK, Mahoney B, Qualter P. Does emotional intelligence buffer the effects of acute stress? A systematic review. Frontiers in Psychology. 2019;10:810. https://doi.org/10.3389/fpsyg.2019.00810

31. Mérida-López S, Extremera N. Emotional intelligence and teacher burnout: A systematic review. International Journal of Educational Research. 2017;85:121-130. https://doi.org/10.1016/j.ijer.2017.07.006

32. Landa JM, López-Zafra E, Martos MP, del Carmen Aguilar-Luzon M. The relationship between emotional intelligence, occupational stress and health in nurses: A questionnaire survey.

International Journal of Nursing Studies. 2008;45(6):888-901. https://doi.org/10.1016/j.ijnurstu.2007.03.005

33. Ng SM, Ke GN, Raymond W. The mediating role of work locus of control on the relationship among emotional intelligence, organisational citizenship behaviours, and mental health among nurses. Australian Journal of Psychology. 2014;66(4):207-215. https://doi.org/10.1111/ajpy.12049

34. Montes-Berges B, Augusto-Landa JM. Emotional intelligence and affective intensity as life satisfaction and psychological well-being predictors on nursing professionals. Journal of Professional Nursing. 2014;30(1):80-88. https://doi.org/10.1016/j.profnurs.2012.12.012

35. Pérez-Fuentes MD, Molero Jurado MD, Del Pino RM, Gázquez Linares JJ. Emotional intelligence, self-efficacy and empathy as predictors of overall self-esteem in nursing by years of experience. Frontiers in Psychology. 2019;10:2035. https://doi.org/10.3389/fpsyg.2019.02035

36. Görgens-Ekermans G, Brand T. Emotional intelligence as a moderator in the stress–burnout relationship: a questionnaire study on nurses. Journal of Clinical Nursing. 2012;21(15-16):2275-2285. https://doi.org/10.1111/j.1365-2702.2012.04171.x

37. Markiewicz K. Burnout as a mediator of the interrelations between emotional intelligence and stress coping strategies in nurses. Acta Neuropsychologica. 2019;17(3):233-244.

38. Ünal ZM. The contribution of emotional intelligence on the components of burnout: The case of health care sector professionals. Electronic Journal of Business Ethics and Organization Studies. 2014;19(2):27-34.

39. Weng HC, Hung CM, Liu YT, Cheng YJ, Yen CY, Chang CC, Huang CK. Associations between emotional intelligence and doctor burnout, job satisfaction and patient satisfaction. Medical Education. 2011;45(8):835-842. https://doi.org/10.1111/j.1365-2923.2011.03985.x

40. Zeidner M, Hadar D, Matthews G, Roberts RD. Personal factors related to compassion fatigue in health professionals. Anxiety, Stress & Coping. 2013;26(6):595-609. https://doi.org/10.1080/10615806.2013.777045

41. Zeidner M, Hadar D. Some individual difference predictors of professional well-being and satisfaction of health professionals. Personality and Individual Differences. 2014;65:91-95. https://doi.org/10.1016/j.paid.2014.01.032

42. de Looff P, Didden R, Embregts P, Nijman H. Burnout symptoms in forensic mental health nurses: Results from a longitudinal study. International Journal of Mental Health Nursing. 2019;28(1):306-317. https://doi.org/10.1111/inm.12536

43. Gong Y, Wu Y, Huang P, Yan X, Luo Z. Psychological empowerment and work engagement as mediating roles between trait emotional intelligence and job satisfaction. Frontiers in Psychology. 2020;11:232. https://doi.org/10.3389/fpsyg.2020.00232

44. Yan X, Yang K, Su J, Luo Z, Wen Z. Mediating role of emotional intelligence on the associations between core self-evaluations and job satisfaction, work engagement as indices of work-related well-being. Current Psychology. 2018;37(3):552-558. https://doi.org/10.1007/s12144-016-9531-2

45. Gerits L, Derksen JJ, Verbruggen AB, Katzko M. Emotional intelligence profiles of nurses caring for people with severe behaviour problems. Personality and Individual Differences. 2005;38(1):33-43. https://doi.org/10.1016/j.paid.2004.03.019

46. Hong E, Lee YS. The mediating effect of emotional intelligence between emotional labour, job stress, burnout and nurses' turnover intention. International Journal of Nursing Practice. 2016;22(6):625-632. https://doi.org/10.1111/ijn.12493

47. Nauman S, Raja U, Haq IU, Bilal W. Job demand and employee well-being: A moderated mediation model of emotional intelligence and surface acting. Personnel Review. 2019;48(5):1150-1168. https://doi-org.ezproxy.lancs.ac.uk/10.1108/PR-04-2018-0127

48. Rinker J. The relationship between emotional intelligence and PTSD symptoms in firefighters and emergency medical personnel [dissertation]. Chicago (IL): Adler School of Professional Psychology; 2016.

49. Abdali N, Nobahar M, Ghorbani R. Evaluation of emotional intelligence, sleep quality, and fatigue among Iranian medical, nursing, and paramedical students: A cross-sectional study. Qatar Medical Journal. 2019;2019(3):1-11. http://dx.doi.org/10.5339/qmj.2019.15

50. Dilawar SM, Durrani DK, Li X, Anjum MA. Decision-making in highly stressful emergencies: The interactive effects of trait emotional intelligence. Current Psychology. 2021;40(6):2988-3005. https://doi-org.ezproxy.lancs.ac.uk/10.1007/s12144-019-00231-y

51. Lambert J. The impact of emotional intelligence and affective behavior on paramedic student field internship success [dissertation]. Irvine (CA): Brandman University; 2019.

52. Sellakumar GK. Efficacy of behavioural interventions in the development of emotional intelligence among paramedical students. Journal of Psychological and Educational Research. 2017;25(1):49-64.

53. Neff KD. Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. Self and Identity. 2003;2(2):85-101. https://doi.org/10.1080/15298860309032

54. Neff KD. Self-Compassion: Theory, method, research, and intervention. Annual Review of Psychology. 2022;74:193-218. https://doi.org/10.1146/annurev-psych-032420- 031047

55. MacBeth A, Gumley A. Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. Clinical Psychology Review. 2012;32(6):545-552. https://doi.org/10.1016/j.cpr.2012.06.003

56. Zessin U, Dickhäuser O, Garbade S. The relationship between self-compassion and well-being: A meta-analysis. Applied Psychology: Health and Well-Being. 2015;7(3):340-364. https://doi.org/10.1111/aphw.12051

57. Anjum MA, Liang D, Durrani DK, Parvez A. Workplace mistreatment and emotional exhaustion: The interaction effects of self-compassion. Current Psychology. 2020;5:1-2. https://doi.org/10.1007/12144-020-00673-9

58. Reizer A. Bringing self-kindness into the workplace: Exploring the mediating role of self-compassion in the associations between attachment and organizational outcomes. Frontiers in Psychology. 2019;10:1148-1148. https://doi.org/10.3389/fpsyg.2019.01148

59. Biber DD, Ellis R. The effect of self-compassion on the self-regulation of health behaviors: A systematic review. Journal of Health Psychology. 2019;24(14):2060-2071. https://doi.org/10.1177/1359105317713361

60. Wilson AC, Mackintosh K, Power K, Chan SW. Effectiveness of self-compassion related therapies: A systematic review and meta-analysis. Mindfulness. 2019;10(6):979-995. https://doi.org/10.1007/s12671-018-1037-6

61. Buceta MI, Bermejo JC, Villacieros M. Enhancer elements of compassion satisfaction in healthcare professionals. Anales de Psicologia. 2019;35(2):323-331. http://dx.doi.org/10.6018/analesps.35.2.345101

62. Duarte J, Pinto-Gouveia J, Cruz B. Relationships between nurses' empathy, self-compassion and dimensions of professional quality of life: A cross-sectional study. International Journal of Nursing Studies. 2016;60:1-11. https://doi.org/10.1016/j.ijnurstu.2016.02.015

63. Duarte J, Pinto-Gouveia J. Mindfulness, self-compassion and psychological inflexibility mediate the effects of a mindfulness-based intervention in a sample of oncology nurses. Journal of

Contextual Behavioral Science. 2017;6(2):125-133. https://doi.org/10.1016/j.jcbs.2017.03.002

64. Hashem Z, Zeinoun P. Self-compassion explains less burnout among healthcare professionals. Mindfulness. 2020;11(11):2542-2551. https://doi.org/10.1007/s12671-020-01469-5

65. Dev V, Fernando AT, Consedine NS. Self-compassion as a stress moderator: a cross-sectional study of 1700 doctors, nurses, and medical students. Mindfulness. 2020;11(5):1170-1181. https://doi.org/10.1007/s12671-020-01325-6

66. Delaney MC. Caring for the caregivers: Evaluation of the effect of an eight-week pilot Mindful Self-Compassion (MSC) training program on nurses' compassion fatigue and resilience. PLoS One. 2018;13(11):e0207261. https://doi.org/10.1371/journal.pone.0207261

67. Neff KD, Knox MC, Long P, Gregory K. Caring for others without losing yourself: An adaptation of the mindful self-compassion program for healthcare communities. Journal of Clinical Psychology. 2020;76(9):1543-1562. https://doi.org/10.1002/jclp.23007

68. Davis EK. Trauma in emergency services: A systematic review of posttraumatic growth in firefighters and an investigation into post-traumatic stress symptoms in ambulance clinicians: severity and associations with self compassion, psychological inflexibility and wellbeing [unpublished dissertation]. Edinburgh (UK): University of Edinburgh; 2017.

69. Bilsker D, Gilbert M, Alden L, Sochting I, Khalis A. Basic dimensions of resilient coping in paramedics and dispatchers. Australasian Journal of Paramedicine. 2019;16:1-8. https://doi.org/10.33151/ajp.16.690

70. Rojas R, Hickmann M, Wolf S, Kolassa IT, Behnke A. Coping in the emergency medical services: Associations with the personnel's stress, self-efficacy, job satisfaction, and health. Clinical Psychology in Europe. 2022;4(1):1-25. https://doi.org/10.32872/cpe.6133

71. Mitmansgruber H, Beck TN, Schüßler G. “Mindful helpers”: Experiential avoidance, meta-emotions, and emotion regulation in paramedics. Journal of Research in Personality. 2008;42(5):1358-1363. https://doi.org/10.1016/j.jrp.2008.03.012

72. Health Education England. NHS staff and learners’ mental wellbeing report. UK; 2019. https://www.hee.nhs.uk/our-work/mental-wellbeing-report

73. NHS England. NHS long term plan. UK; 2019. https://www.longtermplan.nhs.uk/

74. Association of Ambulance Chief Executives. Employee mental health strategy guidance. UK; 2018. https://aace.org.uk/wp-content/uploads/2021/05/AACE-Employee-Mental-Health-Strategy-Guidance-.pdf

75. Seligman M. PERMA and the building blocks of well-being. The Journal of Positive Psychology. 2018;13(4):333-335. https://doi.org/10.1080/17439760.2018.1437466

76. Schutte NS, Malouff JM, Hall LE, Haggerty DJ, Cooper JT, Golden CJ, Dornheim L. Development and validation of a measure of emotional intelligence. Personality and Individual Differences. 1998;25(2):167-177. https://doi.org/10.1016/S0191-8869(98)00001-4

77. O'Connor PJ, Hill A, Kaya M, Martin B. The measurement of emotional intelligence: A critical review of the literature and recommendations for researchers and practitioners. Frontiers in Psychology. 2019;10:1116. https://doi.org/10.3389/fpsyg.2019.01116

78. Petrides KV, Furnham A. On the dimensional structure of emotional intelligence. Personality and Individual Differences. 2000;29(2):313-320. https://doi.org/10.1016/S0191-8869(99)00195-6

79. Brackett MA, Mayer JD. Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. Personality and Social Psychology Bulletin. 2003;29(9):1147-1158.

80. Craparo G, Magnano P, Faraci P. Psychometric properties of the Italian version of the self-report emotional intelligence test (SREIT). TPM: Testing, Psychometrics, Methodology in Applied Psychology. 2014;21(2):121-133. https://doi.org/10.4473/TPM21.2.1

81. Musonda A, Shumba O, Tailoka FP. Validation of the Schutte Self Report Emotional Intelligence Scale in a Zambian context. European Journal of Psychology and Educational Research. 2020;2(2):31-41. https://doi.org/10.12973/ejper.2.2.31

82. Neff KD. The development and validation of a scale to measure self-compassion. Self and Identity. 2003;2(3):223-250. https://doi.org/10.1080/15298860309027

83. Brenner RE, Heath PJ, Vogel DL, Credé M. Two is more valid than one: Examining the factor structure of the Self-Compassion Scale (SCS). Journal of Counseling Psychology. 2017;64(6):696-707. https://doi.org/10.1037/cou0000211

84. Brenner RE, Vogel DL, Lannin DG, Engel KE, Seidman AJ, Heath PJ. Do self-compassion and self-coldness distinctly relate to distress and well-being? A theoretical model of self-relating. Journal of Counseling Psychology. 2018;65(3):346-357. https://doi.org/10.1037/cou0000257

85. Costa J, Marôco J, Pinto-Gouveia J, Ferreira C, Castilho P. Validation of the psychometric properties of the Self-Compassion Scale: Testing the factorial validity and factorial invariance of the measure among borderline personality disorder, anxiety disorder, eating disorder and general populations. Clinical Psychology and Psychotherapy. 2016;23(5):460-468. https://doi.org/10.1002/cpp.1974

86. López A, Sanderman R, Smink A, Zhang Y, Van Sonderen E, Ranchor A, Schroevers MJ. A reconsideration of the Self-Compassion Scale's total score: Self-compassion versus self-criticism. PloS one. 2015;10(7):e0132940. https://doi.org/10.1371/journal.pone.0132940

87. Neff KD. The Self-Compassion Scale is a valid and theoretically coherent measure of self-compassion. Mindfulness. 2016;7(1):264-274. https://doi.org/10.1007/s12671-015-0479-3

88. Heritage B, Rees CS, Hegney DG. The ProQOL-21: A revised version of the Professional Quality of Life (ProQOL) scale based on Rasch analysis. PloS one. 2018;13(2):e0193478. https://doi.org/10.1371/journal.pone.0193478

89. Stamm BH. The concise ProQOL manual. 2010. https://proqol.org/proqol-manual.

90. Tennant R, Hiller L, Fishwick R, Platt S, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S. The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS): Development and UK validation. Health and Quality of Life Outcomes. 2007;5(1):1-13. https://doi.org/10.1186/1477-7525-5-63

91. Stewart-Brown SL, Platt S, Tennant A, Maheswaran H, Parkinson J, Weich S, Tennant R, Taggart F, Clarke A. The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS): A valid and reliable tool for measuring mental well-being in diverse populations and projects. Journal of Epidemiology and Community Health. 2011;65(2):A38-A39. http://dx.doi.org/10.1136/jech.2011.143586.86

92. Oates J, Jones J, Drey N. Subjective well-being of mental health nurses in the United Kingdom: Results of an online survey. International Journal of Mental Health Nursing. 2017;26(4):391-401. https://doi.org/10.1111/inm.12263 bs_bs_banner 14470349, 2017, 4, Dow

93. Kaur D, Sambasivan M, Kumar N. Impact of emotional intelligence and spiritual intelligence on the caring behavior of nurses: A dimension-level exploratory study among public hospitals in Malaysia. Applied Nursing Research. 2015;28(4):293-298. https://doi.org/10.1016/j.apnr.2015.01.006

94. Markert-Green BJGO. Coping skills, emotional intelligence, attachment, and resilience on Post-Traumatic Stress Disorder in private sector Emergency Medical Technicians [dissertation]. Berrien Springs (MI): Andrews University; 2021.

95. Romosiou V, Brouzos A, Vassilopoulos SP. An integrative group intervention for the enhancement of emotional intelligence, empathy, resilience and stress management among police officers. Police Practice and Research. 2019;20(5):460-478. https://doi.org/10.1080/15614263.2018.1537847

96. Wagner S, Fraess-Phillips A, Mikkelson K. Recruit firefighters: Personality and mental health. International Journal of Emergency Services. 2016;5(2);199-211. https:doi.org/10.1108/IJES-08-2016-0015

97. Kamri KA, Mejah MH, Hamid AH. Job stress and emotional intelligence among police officer at General Operation Force, Royal Malaysia Police. International Journal of Psychosocial Rehabilitation. 2019;23(2):599-611.

98. Kaurin A, Schönfelder S, Wessa M. Self-compassion buffers the link between self-criticism and depression in trauma-exposed firefighters. Journal of Counseling Psychology. 2018;65(4):453-462. http://dx.doi.org/10.1037/cou0000275

99. Çetin B, Gündüz HB, Ahmet AK. An investigation of the relationships between self-compassion, motivation, and burnout with structural equation modeling. Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi. 2008;8(2):39-45.

100. Ondrejková N, Halamová J. Prevalence of compassion fatigue among helping professions and relationship to compassion for others, self-compassion and self-criticism. Health and Social Care in the Community. 2022;30:1680-1694. https:doi.org/10.1111/hsc.13741

101. Crampton DJ. Comparison of PTSD and compassion fatigue between urban and rural paramedics [dissertation]. Denver (CO): The University of the Rockies; 2014.

102. Jackman PC, Henderson H, Clay G, Coussens AH. The relationship between psychological wellbeing, social support, and personality in an English police force. International Journal of

Police Science and Management. 2020;22(2):183-193. https:doi.org/10.1177/1461355720907620

103. Keech JJ, Cole KL, Hagger MS, Hamilton K. The association between stress mindset and physical and psychological wellbeing: Testing a stress beliefs model in police officers. Psychology and Health. 2020;35(11):1306-1325. https://doi.org/10.1080/08870446.2020.1743841

104. Lowery A, Cassidy T. Health and well-being of first responders: The role of psychological capital, self-compassion, social support, relationship satisfaction, and physical activity. Journal of Workplace Behavioral Health. 2022;37(2):87-105. https://doi.org/10.1080/15555240.2021.1990776

105. Lluch C, Galiana L, Doménech P, Sansó N. The impact of the COVID-19 pandemic on burnout, compassion fatigue, and compassion satisfaction in healthcare personnel: A systematic review of the literature published during the first year of the pandemic. Healthcare. 2022;10(2);364-405. https://doi.org/10.3390/healthcare10020364

106. Galiana L, Sansó N, Muñoz-Martínez I, Vidal-Blanco G, Oliver A, Larkin PJ. Palliative care professionals' inner life: Exploring the mediating role of self-compassion in the prediction of compassion satisfaction, compassion fatigue, burnout and wellbeing. Journal of Pain and Symptom Management. 2022;63(1):112-123. https://doi.org/10.1016/j.jpainsymman.2021.07.004

107. Yu H, Qiao A, Gui L. Predictors of compassion fatigue, burnout, and compassion satisfaction among emergency nurses: A cross-sectional survey. International Emergency Nursing. 2021;55:100961. https://doi.org/10.1016/j.ienj.2020.100961

108. Coetzee SK, & Klopper HC. Compassion fatigue within nursing practice: A concept analysis. Nursing and Health Sciences. 2010;12(2):235–243. https://doi.org/10.1111/j.1442-2018.2010.00526.x

109. Renkiewicz GK, Hubble MW. Secondary Traumatic Stress in Emergency Services Systems (STRESS) project: Quantifying and predicting compassion fatigue in emergency medical services personnel. Prehospital Emergency Care. 2021;26(5):652-663. https://doi.org/10.1080/10903127.2021.1943578

110. Maillet S, Read E. Work environment characteristics and emotional intelligence as correlates of nurses' compassion satisfaction and compassion fatigue: A cross-sectional survey study. Nursing Reports. 2021;11(4):847-858. https:// doi.org/10.3390/nursrep11040079

111. Ericsson CR, Nordquist H, Lindström V, Rudman A. Finnish paramedics' professional quality of life and associations with assignment experiences and defusing use–a cross-sectional study. BMC Public Health. 2021;21(1):1-9. https://doi.org/10.1186/s12889-021-11851-0

112. Turgoose D, Maddox L. Predictors of compassion fatigue in mental health professionals: A narrative review. Traumatology. 2017;23(2):172-185. https://doi.org/10.1037/trm0000116

113. Trumello C, Bramanti SM, Ballarotto G, Candelori C, Cerniglia L, Cimino S, Crudele M, Lombardi L, Pignataro S, Viceconti ML, Babore A. Psychological adjustment of healthcare workers in Italy during the COVID-19 pandemic: Differences in stress, anxiety, depression, burnout, secondary trauma, and compassion satisfaction between frontline and non-frontline professionals. International Journal of Environmental Research and Public Health. 2020;17(22):8358-8370. https://doi.org/10.3390/ijerph17228358

114. Noshili AI, Batool R, Najmi AA, Najmi MA, Abiri HM, Khubrani FY, Taweel FM, Alhurrath AA, Hamzi JM. Relationship between personality trait, and mental health well-being, the mediating role of emotional intelligence among healthcare workers in Jizan, KSA. Journal of Positive School Psychology. 2022;6(10):1833-1551.

115. Bar-On R. The Bar-On model of emotional-social intelligence (ESI). Psicothema. 2006;18:13-25.

116. Carmeli A, Yitzhak-Halevy M, Weisberg J. The relationship between emotional intelligence and psychological wellbeing. Journal of Managerial Psychology. 2009;24(1):66-78. https://doi.org/10.1108/02683940910922546

117. Ruiz-Aranda D, Extremera N, Pineda-Galan C. Emotional intelligence, life satisfaction and subjective happiness in female student health professionals: The mediating effect of perceived stress. Journal of Psychiatric and Mental Health Nursing. 2014;21(2):106-113. https://doi.org/10.1111/jpm.12052

118. Baer RA, Lykins EL, Peters JR. Mindfulness and self-compassion as predictors of psychological wellbeing in long-term meditators and matched nonmeditators. The Journal of Positive Psychology. 2012;7(3):230-238. https://doi.org/10.1080/17439760.2012.674548

119. Neff KD, Long P, Knox MC, Davidson O, Kuchar A, Costigan A, Williamson Z, Rohleder N, Tóth-Király I, Breines JG. The forest and the trees: Examining the association of self-compassion and its positive and negative components with psychological functioning. Self and Identity. 2018;17(6):627-645. https://doi.org/10.1080/15298868.2018.1436587

120. Upton KV. An investigation into compassion fatigue and self-compassion in acute medical care hospital nurses: A mixed methods study. Journal of Compassionate Health Care. 2018;5(1):1-27. https://doi.org/10.1186/s40639-018-0050-x

121. Muris P, Otgaar H. The process of science: A critical evaluation of more than 15 years of research on self-compassion with the Self-Compassion Scale. Mindfulness. 2020;11(6):1469-1482. https://doi.org/10.1007/s12671-020-01363-0

122. Muris P, Petrocchi N. Protection or vulnerability? A meta-analysis of the relations between the positive and negative components of self-compassion and psychopathology. Clinical Psychology and Psychotherapy. 2017;24(2):373-383. https://doi.org/10.1002/cpp.2005

123. Ferrari M, Hunt C, Harrysunker A, Abbott MJ, Beath AP, Einstein DA. Self-compassion interventions and psychosocial outcomes: A meta-analysis of RCTs. Mindfulness. 2019;10:1455-1473. https://doi.org/10.1007/s12671-019-01134-6

124. Mind. Wellbeing and mental health support in the emergency services. UK; 2019. https://www.mind.org.uk/media-a/4572/20046_mind-blue-light-programme-legacy-report-v12_online.pdf

125. Eaton-Williams PJ, Williams J. “See us as humans. Speak to us with respect. Listen to us.” A qualitative study on UK ambulance staff requirements of leadership while working during the COVID-19 pandemic. BMJ Leader. 2022. https://doi.org/10.1136/leader-2022-000622

126. Kline R. (2019). Leadership in the NHS. BMJ Leader. 2019;3:129-132. https://doi.org/10.1136/leader-2019-000159

127. West M, Eckert R, Collins B, Chowla R. Caring to change: How compassionate leadership can stimulate innovation in health care. London (UK): The King's Fund; 2017. https://nhswalesleadershipportal.heiw.wales/api/storage/5b23737a-f38d-4918-b321-c59772ca08b3/Caring_to_change_Kings_Fund_May_2017.pdf

128. Billings J, Ching BC, Gkofa V, Greene T, Bloomfield M. Healthcare workers’ experiences of working on the frontline and views about support during COVID-19 and previous pandemics: A systematic review and qualitative meta-synthesis. Research Square. 2021:1-30. https://doi.org/10.21203/rs.3.rs-322448/v

129. Clark M. Co-production in mental health care. Mental Health Review Journal. 2015;20(4):213-219. https://doi.org/10.1108/MHRJ-10-2015-0030

130. Division of Clinical Psychology. National mental health, well-being and psychological therapies – the role of clinical psychology. UK; 2014. https://cms.bps.org.uk/sites/default/files/2022-07/National%20Mental%20Health%2C%20Well-

Being%20and%20Psychological%20Therapies%20-%20the%20role%20of%20Clinical%20Psychology.pdf

131. NHS Digital. Equality and diversity in NHS Trusts and core organisations June 2022. UK; 2022. https://digital.nhs.uk/data-and-information/publications/statistical/nhs-workforce-statistics/june-2022#resources

132. Şenyuva E, Kaya H, Işik B, Bodur G. Relationship between self-compassion and emotional intelligence in nursing students. International Journal of Nursing Practice. 2014;20(6):588-596. https://doi.org/10.1111/ijn.12204

Table 1

Participant Demographic Characteristics

		N	%
Gender			
	Male	54	37.0
	Female	91	62.3
	Non-binary	1	0.7
Age			
	18-24 years	18	12.3
	25-34 years	54	37.0
	35-44 years	30	20.5
	45-54 years	32	21.9
	55-64 years	11	7.5
	Over 65 years	1	0.7
Ethnicity			
	White British	137	93.8
	Any other white background	5	3.4
	Multiple ethnic backgrounds	3	2.1
	Asian	1	0.7
Job role			
	Paramedic (including specialist paramedics)	82	56.2

	Emergency Medical Technician	32	21.9
	Student paramedic	3	2.1
	Ambulance support staff	25	17.1
	Call handler	4	2.7
Years of experience as ambulance staff			
	0-1	11	7.5
	1-5	60	41.1
	6-10	35	24.0
	11-15	17	11.6
	16-20	7	4.8
	21-25	7	4.8
	26-30	5	3.4
	30+	4	2.7

Table 2

Descriptive Statistics and Cronbach's Alpha for Study Variables

	M (SD)	α
Self-Report Emotional Intelligence Test	116.23 (13.86)	.89
Self-Compassion Scale - self-kindness	33.64 (11.06)	.93
Self-Compassion Scale - self-coldness	42.65 (12.10)	.93
Professional Quality of Life Scale - compassion fatigue	29.18 (9.42)	.91
Professional Quality of Life Scale - compassion satisfaction	36.75 (7.53)	.93
Warwick-Edinburgh Mental Wellbeing Scale	43.05 (10.00)	.94

Table 3

Correlation Coefficients for Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.
1. Age	-	.595**	.117	.291**	-.418**	.132	-.090	.202*
2. Years of experience		-	.004	.045	-.155	-.091	.169*	-.039
3. EI			-	.618**	-.459**	.540**	-.224**	.526**
4. Self-kindness				-	-.698**	.414**	-.251**	.607**
5. Self-coldness					-	-.378**	.368**	-.654**
6. CS						-	-.510**	.628**
7. CF							-	-.594**
8. Psychological wellbeing								-

Note. EI = emotional intelligence; CS = compassion satisfaction; CF = compassion fatigue.

* p <.05, ** p<.01

Table 4

Results of Hierarchical Multiple Regression for Compassion Fatigue

		B	SE	*Beta*	*t*	*p*	R^2	*Adj* R^2	R^2 *Change*	*F Change*
Step 1							.083	.071	.083	6.502**
	Age	-2.304	.788	-.290	-2.924	.004				
	Years of experience	1.948	.568	.340	3.428	.001				
Step 2							.121	.102	.037	6.035*
	Age	-2.032	.782	-.255	-2.597	.010				
	Years of experience	1.837	.560	.320	3.278	.001				
	EI	-.133	.054	-.195	-2.457	.015				
Step 3							.200	.172	.080	6.962**
	Age	-.940	.821	-.118	-1.145	.254				
	Years of experience	1.693	.544	2.95	3.111	.002				
	EI	-.064	.066	-.094	-.975	.331				
	Self-kindness	.087	.102	.102	.846	.339				

Self-coldness	.305	.087	.392	3.515	.001

Note. EI = emotional intelligence

* p <.05, ** p<.01

Table 5

Results of Hierarchical Multiple Regression for Compassion Satisfaction

		B	SE	*Beta*	*t*	*p*	R^2	*Adj* R^2	R^2 *Change*	*F Change*
Step 1							.061	.048	.061	4.650*
	Age	1.807	.637	.284	2.835	.005				
	Years of experience	-1.185	.460	-.259	-2.579	.011				
Step 2							.324	.310	.263	55.320**
	Age	1.228	.548	.193	2.241	.027				
	Years of experience	-.950	.393	-.207	-2.419	.017				
	EI	.282	.038	.518	7.438	<.001				
Step 3							.337	.314	.013	1.367
	Age	.842	.597	.133	1.410	.161				
	Years of experience	-.884	.396	-.193	-2.234	.027				
	EI	.250	.048	.460	5.215	<.001				
	Self-kindness	.002	.075	.003	.026	.979				

Self-coldness	-.087	.063	-.140	-1.377	.171

Note. EI = emotional intelligence

* p <.05, ** p<.01

Table 6

Results of Hierarchical Multiple Regression for Psychological Wellbeing

		B	SE	*Beta*	*t*	*p*	R^2	*Adj* R^2	R^2 *Change*	*F Change*
Step 1							.079	.066	.079	6.135**
	Age	2.907	.838	.344	3.469	.001				
	Years of experience	-1.474	.604	-.242	-2.439	.016				
Step 2							.320	.306	.241	50.418**
	Age	2.172	.730	.257	2.976	.003				
	Years of experience	-1.174	.523	-.193	-2.246	.026				
	EI	.358	.050	.496	7.101	<.001				
Step 3							.517	.500	.197	28.544**
	Age	.115	.677	.014	.170	.866				
	Years of experience	-.771	.449	-.127	-1.719	.088				
	EI	.158	.054	.219	2.916	.004				
	Self-kindness	.136	.084	.151	1.614	.109				

Self-coldness	-.382	.072	-.462	-5.336	<.001

Note. EI = emotional intelligence

* p <.05, ** p<.01

Appendix A: Prehospital Emergency Care Instructions for Authors

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1. Heidari S, Babor TF, De Castro P, Tort S, Curno M. Sex and Gender Equity in Research: rationale for the SAGER guidelines and recommended use. Res Integr Peer Rev. 2016;1:2. https://researchintegrityjournal.biomedcentral.com/articles/10.1186/s41073-016-0007-6#Tab1
2. Clayton JA, Tannenbaum C. Reporting sex, gender, or both in clinical research? JAMA. 2016;316(18):1863-1864. doi:10.1001/jama.2016.16405

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Section Three: Critical Appraisal

Critical Reflections on a Research Project Exploring Emotional Intelligence, Self-Compassion and Wellbeing in Ambulance Staff

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Critical Reflections on a Research Project Exploring Emotional Intelligence, Self-Compassion and Wellbeing in Ambulance Staff

This critical review aims to consider issues arising from the empirical paper. It will focus on the conceptualisation and measurement of three key variables in the study: self-compassion, compassion fatigue (CF) and emotional intelligence (EI). It will then consider issues regarding the paper's focus on individual factors in ambulance staff wellbeing rather than organisational and contextual factors.

Empirical Results

The aim of the empirical study was to explore the relationships between EI, self-compassion, and wellbeing in ambulance staff. 146 ambulance staff completed self-report measures on their demographic characteristics, EI, self-compassion, professional quality of life, and psychological wellbeing. Self-compassion consisted of the two factors of self-kindness and self-coldness, and professional quality of life consisted of compassion satisfaction (CS) and CF. The study found that greater EI and self-kindness and lower self-coldness significantly correlated with greater CS and psychological wellbeing and lower CF. In regression analyses, years of experience and self-coldness significantly predicted greater CF; fewer years of experience and greater EI predicted greater CS; and greater EI and lower self-coldness predicted greater psychological wellbeing. The study achieved the target number of participants. It focused on the under-researched population of ambulance staff, and concepts rarely explored in this group, self-compassion and EI. Therefore, this study offers a useful base for future research to explore these concepts further in ambulance staff and other first responder populations. The findings have potential implications for ambulance services in supporting staff wellbeing. For example, services may support the reduction of self-coldness in staff by developing a more compassionate culture, and

enhance EI by offering greater emotional support and space for reflection. Clinical psychologists may be well-placed to support ambulance staff wellbeing by co-developing interventions and coping strategies with staff to focus on their particular needs.

Conceptualisation and Measurement of Key Variables

Self-Compassion

There is a lack of consensus regarding the definitions of compassion and self-compassion within the literature. Compassion has variously been defined as an emotion, a motivation, or a larger, multi-faceted construct (1, 2), and the common factors across definitions appear to be an awareness of suffering, having an emotional response to it, and feeling motivated to reduce the suffering (2). There are further differences when comparing definitions of compassion for others and self-compassion. For example, while Neff (3) defined self-compassion as a way of relating to oneself during challenges - with self-kindness, viewing one's experiences as part of the human condition and being mindful of one's experiences rather than self-judgement, feeling isolated, or over-identifying with one's experiences, Gilbert (4) defined compassion as a motivation that incorporates "…a sensitivity to suffering…with a commitment to try to alleviate and prevent it" (p.14), which can be applied to others or the self. Previous research has found a lack of association between compassion for others and self-compassion (5), thus the difference between definitions may indicate that compassion for others and self-compassion are separate constructs (2). Current literature is unclear regarding how far these are actually part of the same or separate concepts, thus further research is needed to provide a useful clarification. As the current study focused on self-compassion, Neff's (3) definition was used.

There has also been debate over the measurement of self-compassion. The most commonly used self-compassion measures are the Self-Compassion Scale (SCS; 6), and the

shortened version, SCS-SF (7). The SCS has six subscales: self-judgement, isolation, and over-identification (forming the self-coldness factor) and self-kindness, mindfulness, and common humanity (forming the self-kindness factor). Research suggests that the SCS has good reliability and validity for the overall self-compassion score and the six subscales (2, 6), with overall self-compassion scores related to lower levels of psychopathology and better psychological wellbeing (6, 8-12), and predicting fewer mental health symptoms over time in longitudinal research (13, 14).

However, the validity of these two self-compassion measures has been criticised due to the inclusion of the three subscales which make up the self-coldness factor. Neff (15) defended the inclusion of these self-coldness subscales, arguing that self-compassion represents a continuum ranging from uncompassionate (self-coldness) to compassionate (self-kindness) responding. Others argue that self-coldness should not be included as it reflects vulnerabilities to mental health difficulties rather than being protective, as self-compassion is theorised to be (16). Self-coldness correlates more strongly with mental health symptoms than the self-kindness subscales (9, 11, 16-18). Further, research on the psychometric properties of the SCS found that an overall self-compassion score did not fit the data and that separating the two factors of self-kindness and self-coldness was a better fit (9, 17, 19). This indicates that the SCS measures these two separate constructs rather than being a measure of overall self-compassion (16). Therefore, the SCS was used in the current study as it is the dominant measure of self-compassion in literature (20), and is reported to be one of the strongest measures, both psychometrically and conceptually (2). The separate self-kindness and self-coldness factors were used, as has been recommended, to determine the predictive value of each subscale without conflating the positive and negative aspects of self-compassion (20).

It would be beneficial for the cohesiveness of future research into self-compassion to develop greater consensus on its definition and to further explore the relative contribution of self-coldness and self-kindness to wellbeing in order to determine whether both are appropriate to include in self-compassion measures. This may lead to the development of more robust measures (2) including measures other than self-report, such as clinical assessment (6).

Compassion Fatigue

The term 'compassion fatigue' was coined in 1992 (21) to define the negative physical, emotional, and work-related effects of caring for and trying to help those in distress or suffering (22, 23). These effects can be physical, such as tiredness and lack of energy; emotional, such as low mood, anger, cynicism, anxiety, apathy, or hopelessness; and include trauma-responses such as intrusive thoughts, traumatic memories, avoidance of reminders of traumatic events, and difficulty concentrating (21, 24-28). Work-related effects can include poorer relationships with colleagues and lower satisfaction with work, and thus increase intention to leave the job (23-25). These effects can lead to worse outcomes for services and patients, such as staff avoiding or feeling indifferent towards patients, poorer patient care, poorer clinical judgement, lower patient satisfaction, and more medical errors (23-25). Therefore, CF in healthcare professionals (HCPs) can negatively impact staff, patients, and services.

It is proposed that CF results from a progressive process where a staff member has extended and intense contact with suffering patients and has compassion for them (24, 29). This can lead to distress, particularly when the staff member is unable to see improvements or protect patients from suffering (29). Where HCPs' strategies to cope with the distress are unsuccessful (30), the compassionate energy expended can exceed their ability to cope,

resulting in reduced ability to care for others (24) and even resentment, neglect, and rejection of others (30). This suggests that CF represents a reduced capacity to experience compassion for others (25, 31, 32) in terms of their sensitivity towards others' suffering (4).

There is, however, debate regarding CF as a concept. First, CF tends to be used interchangeably with other terms, mainly burnout, secondary traumatic stress (STS), and vicarious traumatization. The literature is unclear on whether or not these are synonymous concepts (33, 34). Joinson (21) theorised that CF was the same as burnout, and Stamm (28) suggested CF incorporated both burnout and STS, with researchers suggesting that CF and burnout are similar as they both involve mental, physical, and emotional exhaustion (23). However, other researchers have highlighted differences between CF and burnout. CF has been described as having a more acute onset of physical and emotional responses, including trauma responses, and is experienced by those in caring roles in response to helping others who are suffering (23, 31, 32). Burnout is described as developing more gradually and is related to more general occupational stressors such as high workload, powerlessness, and lack of job satisfaction, and is associated with many occupations (23, 26, 28, 32, 35). Thus, it seems that CF may be conceptualised as a specific type of burnout affecting people in caring roles (26, 29), incorporating aspects of burnout, such as physical and emotional exhaustion, and STS, such as trauma responses (33).

Further criticism of CF arises from the implication that expressing compassion is inherently exhausting, and that an individual's compassion is limited and becomes depleted over time (25). This would indicate that CF should increase with age and work experience, which has often not been found in research with HCPs (25). It also does not account for CS, the positive effects of compassionate caring for others (28), which can increase pleasure and social connectedness, and may buffer stress rather than causing it (25). Additional

research into the relationship between CF and CS is needed to gain clarity on how these concepts interact, and the factors that determine whether an individual will experience CF or CS.

The use of the term 'compassion' in CF may also be problematic, due to the lack of consensus on the definition of compassion (1). CF being characterised by physical and emotional exhaustion and trauma responses which leads to reduced capacity for caring for others (28) may align more with the definition of compassion as a sensitivity to other's suffering and motivation to alleviate it (4) than 'compassion' in Neff's (3) self-compassion definition. Therefore, while both self-compassion and CF were used in this study and contain the term 'compassion', there is a lack of overlap between the meanings of compassion entailed in these terms. This indicates that a better understanding of compassion is needed before being able to determine the validity of the current concept of CF (34).

The difficulties in defining CF mean that current measures may not adequately differentiate it from other types of occupational stress or capture all aspects of CF (26, 36). This leads to inconsistencies in research and difficulty making comparisons across studies. The current study used the Professional Quality of Life Scale (ProQOL; 28) as it has been found to have good reliability and validity (28). The alternative scoring method combining items regarding burnout and STS proposed by Heritage et al. (33) was used in order to capture both trauma responses and emotional and physical exhaustion in the conceptualisation of CF. The overlap and interchangeability between different terms suggests that further research is needed into each concept (CF, burnout, STS, and vicarious traumatisation) in order to clarify their definitions and how they can be either differentiated

from each other or represent the same concept (23, 34). This could lead to more accurate tools to measure CF (29).

Emotional Intelligence

EI was defined by Mayer and Salovey (37) as a broad intelligence consisting of four branches of abilities: accurately perceiving the emotions of oneself and others; integrating emotion to facilitate thought; understanding emotional information; and managing the emotions of oneself and others. These branches form a hierarchy of ability, growing in complexity at each step (37) and it was posited that greater EI would lead to better wellbeing through being more open to experience and more able to regulate emotions (38, 39). Definitions of EI have since varied, with three main conceptualisations: EI as either an ability, a trait, or a mixed model (40-42). The ability model, such as the Mayer and Salovey (37) model, views EI as a form of intelligence regarding the understanding and management of emotions (40). The trait model (43) views EI as a pattern of behaviours which are relatively stable over time, thus more in line with personality traits. The mixed model, such as that proposed by Bar-On et al. (38), sees EI as a mixture of traits, competencies, and abilities.

Some researchers have questioned the concept of EI, suggesting that it does not offer anything further than the five-factor model of personality traits, given the high correlation with personality traits in previous research (44, 45). Others suggest that EI is no different to general intelligence, due to high correlations with IQ and some studies not finding evidence of a global EI factor (40). However, other research supports EI as a distinct intelligence, having found EI to be correlated with, but separate from, other types of intelligence, and to increase with age, like IQ (46, 47).

This has implications for the measurement of EI. There are a wide range of measures, with one review finding over 40 separate tools to measure ability or trait EI (40, 48). This is significant because ability and trait EI measures tend to be weakly correlated, suggesting they may measure different constructs (49), thus impeding comparison between studies using disparate measures. Ability EI measures tend to be performance-based, measuring factors related to a theoretical understanding of emotions. Tasks involve solving problems relating to emotions, with answers judged correct or incorrect (40, 48). This means they are not amenable to socially desirable responding and have been reported to be more engaging than self-report measures (41, 48). However, they do not predict behaviour as well as trait measures and there are problems determining what constitutes a correct response on such measures, leading to issues with reliability and validity (41, 44, 48). Trait EI measures tend to be self-report measures where respondents choose the item which most closely fits their behaviour in emotion-relevant situations (40). These measures can predict real-world behaviour in a range of situations and tend to have good psychometric properties compared to ability measures (40, 48), though there may be issues with lack of insight, as individuals may under or over-estimate their EI ability. Trait measures are also vulnerable to socially desirable responding (44, 48), though this is more common in situations of potential gain e.g. when a potential employer may view scores, and are thus less likely in anonymous research settings (50). O'Connor et al. (48) recommend that trait measures be used in research where the focus is on real-world behaviour in situations of ongoing stress, such as employment. Thus, a trait EI measure was deemed to be relevant in the current study. The Schutte Self-Report Emotional Intelligence Test (SREIT; 51) was chosen as it has been recommended as a widely used trait measure, with good reliability and validity (40, 48). Some research on the psychometric properties of the SREIT suggested that it does not

measure global EI, consisting instead of four separate factors (45, 52). However, this has been refuted by other research (53), which does support the one-factor model of global EI (54-56). Thus, the empirical paper used total SREIT score as the trait EI measure.

As little research has focused on the conceptual underpinnings of EI compared to the development of measures (57), it would be helpful for future research to explore the theoretical foundations of EI in order to further understand the concept and clarify whether it is an ability or trait, or whether these form two separate concepts. More reliable and valid measures could then be developed to measure EI, which would allow for greater understanding of the potential benefits of EI in wellbeing.

Though not a focus of the current study, data showed a positive correlation between EI and self-compassion, as has been found in previous research (3, 58, 59). EI and self-compassion may be linked as both involve openness to the positive and negative aspects of internal experiences and the ability to accurately perceive ones' emotions, using this knowledge to facilitate thought and action and leading to effective regulation of emotions (39, 59). Further research into how EI and self-compassion develop within an individual would help to clarify any similarities in the foundations of these two concepts and may facilitate greater understanding of their relationship with positive wellbeing.

Organisational and Contextual Factors

One limitation of this study is that it focused solely on individual factors related to wellbeing in ambulance staff. However, previous research suggests that UK ambulance staff also face significant organisational stressors, such as high service demands, lack of funding, staff shortages, long hours, high workload, and lack of breaks (60-66). Management and leadership of services can also be an organisational stressor, with many ambulance staff reportedly experiencing managers as unsupportive and lacking empathy or understanding

for their needs and giving little guidance on how to cope with traumatic workplace incidents (63, 67). Research suggests that staff experience that this as supporting a blame culture which stigmatizes or discourages those in distress from seeking support and leads to a lack of autonomy in their role (62-64, 68, 69). Lack of opportunity for training, development, and promotion further leads to a perception amongst staff that their skills are not recognised or valued (63, 66).

Such organisational stressors can negatively affect ambulance staff's physical and psychological wellbeing and interpersonal relationships (60, 61, 63, 70). In one UK sample, organisational factors had a greater influence on increasing psychological distress in staff than distress related to work calls themselves (71). High service demands can lead staff to feel that performance targets are prioritized over patient care, leading to anxiety, resentment, and distress (62-64). Further, in one study, a sense of psychological safety with managers was associated with fewer mental health symptoms and better wellbeing in ambulance staff (72), while in another, perceptions of management as unsupportive were associated with worse mental and physical health, increased sickness absence, and lower productivity (63). Thus, focusing solely on individual factors in ambulance staff wellbeing may collude with a blame culture towards staff who experience understandable distress given the nature of the work and detract from meaningful discussions around wider systemic issues and organisational changes which could be addressed to improve staff wellbeing. For example, in a review of 39 qualitative studies, Lawn et al. (63) found that ambulance staff reported that they would value organisational changes such as broader recognition of, and recovery time after, distressing incidents, lower stigma around mental health, more access to support, a non-judgemental environment, positive relationships with managers, workplace issues to be taken seriously by management, and adequate

equipment. Thus, it may be helpful for future research with ambulance staff to focus on how organisational and systemic factors affect their wellbeing and the relative influence of organisational and individual factors on wellbeing. This could then guide services in the development of policies around how to best support staff. A qualitative approach to such research may be beneficial in providing in-depth perspectives of staff members.

Organisational and contextual issues may be particularly salient in this study as data collection occurred during the COVID-19 pandemic, a period of increased pressure on ambulance services. For example, increased workload, longer shifts, inadequate access to Personal Protective Equipment (PPE), inconsistent information from employers, and feeling unable to discuss distress with managers were related to increased distress in HCPs during the pandemic (73, 74). Research found that HCPs working during the pandemic reported increased distress, anxiety, depression, insomnia, post-traumatic stress disorder (PTSD), and greater use of alcohol and other substances to cope (74-76), and loss of social support due to self-isolation and not wanting to disclose distressing information to loved ones (73, 77). Further, societal narratives of frontline HCPs as 'heroes' were experienced by some staff as pressure to risk their health and wellbeing to care for others, discouraging them from seeking support and detracting from policy and organisational issues such as working conditions, pay, and budgets (77, 78). This could be detrimental to their wellbeing as HCPs reported coping by 'just getting on with it' which may lead to subjugating or not recognising their own wellbeing needs (77). As paramedics reported a lack of support from employers and even greater levels of PTSD and burnout than other HCPs during the pandemic (79), participants in the current study may have been experiencing poorer wellbeing than they would at other times and may be less aware of their levels of EI, self-compassion, or wellbeing, which may have affected the results. Further research could be completed to

compare the results of the current study with future cohorts of ambulance staff during post-pandemic periods to explore any changes in these variables and relationships between them over time.

Conclusion

In summary, this study has identified the importance of the psychological variables of EI and self-coldness in predicting aspects of the professional and psychological wellbeing of ambulance staff. High levels of CF were found for ambulance staff in the study, highlighting the importance for services of maintaining a focus on improving staff wellbeing, particularly during current high pressures within the ambulance service. This could include developing a more compassionate culture within services and allowing staff more emotional support and reflective spaces in order to reduce self-coldness and enhance EI, thus facilitating staff wellbeing. There may also be a role for clinical psychology in facilitating the development of interventions and wellbeing strategies based around the specific needs of ambulance staff. Additional research which includes organisational factors and a broader range of psychological factors in ambulance staff wellbeing would be useful to determine the relative importance of these factors and how they interact to determine wellbeing. The project has also highlighted inconsistencies in the definitions and conceptualisations of key psychological variables, indicating the need for further clarification of the concepts to increase consistency in the literature and to develop meaningful ways to measure these.

References

1. Gilbert P. Compassion: Definitions and controversies. In: Gilbert P, editor. Compassion: Concepts, research and applications. Oxford (UK): Routledge; 2017. p. 3-15.

2. Strauss C, Taylor BL, Gu J, Kuyken W, Baer R, Jones F, Cavanagh K. What is compassion and how can we measure it? A review of definitions and measures. Clinical Psychology Review. 2016;47:15-27. https://doi.org/10.1016/j.cpr.2016.05.004

3. Neff KD. Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. Self and Identity. 2003;2(2):85-101. https://doi.org/10.1080/15298860309032

4. Gilbert P. The origins and nature of compassion focused therapy. British Journal of Clinical Psychology. 2014;53:6– 41. https://doi.org/10.1111/bjc.12043

5. Neff KD, Pommier E. The relationship between self-compassion and other-focused concern among college undergraduates, community adults, and practicing meditators. Self and Identity. 2013;12(2):160-176. http://dx.doi.org/10.1080/15298868.2011.649546

6. Neff KD. The development and validation of a scale to measure self-compassion. Self and Identity. 2003;2(3):223-250. https://doi.org/10.1080/15298860309027

7. Raes F, Pommier E, Neff KD, Van Gucht D. Construction and factorial validation of a short form of the self-compassion scale. Clinical Psychology and Psychotherapy. 2011;18(3):250-255. https://doi.org/10.1002/cpp.702

8. Ferrari M, Hunt C, Harrysunker A, Abbott MJ, Beath AP, Einstein DA. Self-compassion interventions and psychosocial outcomes: A meta-analysis of RCTs. Mindfulness. 2019;10:1455-1473. https://doi.org/10.1007/s12671-019-01134-6

9. López A, Sanderman R, Smink A, Zhang Y, Van Sonderen E, Ranchor A, Schroevers MJ. A reconsideration of the Self-Compassion Scale's total score: Self-compassion versus self-criticism. PloS one. 2015;10(7):e0132940. https://doi.org/10.1371/journal.pone.0132940

10. MacBeth A, Gumley A. Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. Clinical Psychology Review. 2012;32(6):545-552. https://doi.org/10.1016/j.cpr.2012.06.003

11. Neff KD, Long P, Knox MC, Davidson O, Kuchar A, Costigan A, Williamson Z, Rohleder N, Tóth-Király I, Breines JG. The forest and the trees: Examining the association of self-compassion and its positive and negative components with psychological functioning. Self and Identity. 2018;17(6):627-645. https://doi.org/10.1080/15298868.2018.1436587

12. Zessin U, Dickhäuser O, Garbade S. The relationship between self-compassion and well-being: A meta-analysis. Applied Psychology: Health and Well-Being. 2015;7(3):340-364. https://doi.org/10.1111/aphw.12051

13. Lee EE, Govind T, Ramsey M, Wu TC, Daly R, Liu J, Tu XM, Paulus MP, Thomas ML, Jeste DV. Compassion toward others and self-compassion predict mental and physical well-being: A 5-year longitudinal study of 1090 community-dwelling adults across the lifespan. Translational Psychiatry. 2021;11(1):397-406. https://doi.org/10.1038/s41398-021-01491-8

14. Stutts LA, Leary MR, Zeveney AS, Hufnagle AS. A longitudinal analysis of the relationship between self-compassion and the psychological effects of perceived stress. Self and Identity. 2018;17(6):609-626. https://doi.org/10.1080/15298868.2017.1422537

15. Neff KD. Self-Compassion: Theory, method, research, and intervention. Annual Review of Psychology. 2022;74:193-218. https://doi.org/10.1146/annurev-psych-032420- 031047

16. Muris P, Petrocchi N. Protection or vulnerability? A meta-analysis of the relations between the positive and negative components of self-compassion and psychopathology. Clinical Psychology and Psychotherapy. 2017;24(2):373-383. https://doi.org/10.1002/cpp.2005

17. Brenner RE, Heath PJ, Vogel DL, Credé M. Two is more valid than one: Examining the factor structure of the Self-Compassion Scale (SCS). Journal of Counseling Psychology. 2017;64(6):696-707. https://doi.org/10.1037/cou0000211

18. Brenner RE, Vogel DL, Lannin DG, Engel KE, Seidman AJ, Heath PJ. Do self-compassion and self-coldness distinctly relate to distress and well-being? A theoretical model of self-relating. Journal of Counseling Psychology. 2018;65(3):346-357. https://doi.org/10.1037/cou0000257

19. Costa J, Marôco J, Pinto-Gouveia J, Ferreira C, Castilho P. Validation of the psychometric properties of the Self-Compassion Scale: Testing the factorial validity and factorial invariance of the measure among borderline personality disorder, anxiety disorder, eating disorder and general populations. Clinical Psychology and Psychotherapy. 2016;23(5):460-468. https://doi.org/10.1002/cpp.1974

20. Muris P, Otgaar H. The process of science: A critical evaluation of more than 15 years of research on self-compassion with the Self-Compassion Scale. Mindfulness. 2020;11(6):1469-1482. https://doi.org/10.1007/s12671-020-01363-0

21. Joinson C. Coping with compassion fatigue. Nursing. 1992;22(4):116-118.

22. Figley CR. Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized. New York (NY): Brunner/Mazel; 1995.

23. Sorenson C, Bolick B, Wright K, Hamilton R. Understanding compassion fatigue in healthcare providers: A review of current literature. Journal of Nursing Scholarship. 2016;48(5):456-465. https://doi.org/10.1111/jnu.12229

24. Coetzee SK, & Klopper HC. Compassion fatigue within nursing practice: A concept analysis. Nursing and Health Sciences. 2010;12(2):235–243. https://doi.org/10.1111/j.1442-2018.2010.00526.x

25. Fernando III AT, Consedine NS. Beyond compassion fatigue: The transactional model of physician compassion. Journal of Pain and Symptom Management. 2014;48(2):289-298. https://doi.org/10.1016/j.jpainsymman.2013.09.014

26. Najjar N, Davis LW, Beck-Coon K, Carney Doebbeling C. Compassion fatigue: A review of the research to date and relevance to cancer-care providers. Journal of Health Psychology. 2009;14(2):267-277. https://doi.org/10.1177/1359105308100211

27. Newell JM, MacNeil GA. Professional burnout, vicarious trauma, secondary traumatic stress, and compassion fatigue. Best Practices in Mental Health. 2010;6(2):57-68.

28. Stamm, B. H. The concise ProQOL manual. 2010. https://proqol.org/proqol-manual.

29. Pehlivan T, Güner P. Compassion fatigue: The known and unknown. Journal of Psychiatric Nursing. 2018;9(2):129-134. https://doi.org/10.14744/phd.2017.25582

30. Valent P. Diagnosis and treatment of helper stresses, traumas, and illnesses. In: Figley C, editor. Treating compassion fatigue. Oxford (UK): Routledge; 2002. p. 17-37.

31. Sabo B. Reflecting on the concept of compassion fatigue. Online Journal of Issues in Nursing. 2011;16(1). https://doi.org/10.3912/OJIN.Vol16No01Man01

32. Sinclair S, Raffin-Bouchal S, Venturato L, Mijovic-Kondejewski J, Smith-MacDonald L. Compassion fatigue: A meta-narrative review of the healthcare literature. International Journal of Nursing Studies. 2017;69:9-24. https://doi.org/10.1016/j.ijnurstu.2017.01.003

33. Heritage B, Rees CS, Hegney DG. The ProQOL-21: A revised version of the Professional Quality of Life (ProQOL) scale based on Rasch analysis. PloS one. 2018;13(2):e0193478. https://doi.org/10.1371/journal.pone.0193478

34. Ledoux K. Understanding compassion fatigue: Understanding compassion. Journal of Advanced Nursing. 2015;71(9):2041-2050. https://doi.org/10.1111/jan.12686

35. Sprang G, Clark JJ, Whitt-Woosley A. Compassion fatigue, compassion satisfaction, and burnout: Factors impacting a professional's quality of life. Journal of Loss and Trauma. 2007;12(3):259-280. https://doi.org/10.1080/15325020701238093

36. Bride BE, Radey M, Figley CR. Measuring compassion fatigue. Clinical Social Work Journal. 2007;35:155-163. https://doi.org/10.1007/s10615-007-0091-7

37. Mayer JD, Salovey P. What is emotional intelligence? In: Salovey P, Sluyter D, editors. Emotional development and emotional intelligence: Educational implications. New York (NY): Basic Books; 1997. p. 3-34.

38. Bar-On R. The Bar-On model of emotional-social intelligence (ESI). Psicothema. 2006;18:13-25.

39. Salovey P, Mayer JD. Emotional intelligence. Imagination, Cognition and Personality. 1990;9(3):185-211. https://doi.org/10.2190/DUGG-P24E-52WK-6CDG

40. Bru-Luna LM, Martí-Vilar M, Merino-Soto C, Cervera-Santiago JL. Emotional intelligence measures: A systematic review. Healthcare. 2021;9(12):1696. https://doi.org/10.3390/healthcare9121696

41. Ciarrochi JV, Chan AY, Caputi P. A critical evaluation of the emotional intelligence construct. Personality and Individual Differences. 2000;28(3):539-561. https://doi.org/10.1016/S0191-8869(99)00119-1

42. Fernández-Berrocal P, Extremera N. Emotional intelligence: A theoretical and empirical review of its first 15 years of history. Psicothema. 2006;18:7-12.

43. Petrides KV, Furnham A. Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. European Journal of Personality. 2001;15(6):425-448. https://doi.org/10.1002/per.416

44. Davies M, Stankov L, Roberts RD. Emotional intelligence: In search of an elusive construct. Journal of Personality and Social Psychology. 1998;75(4):989-1015. https://doi.org/10.1037/0022-3514.75.4.989

45. Petrides KV, Furnham A. On the dimensional structure of emotional intelligence. Personality and Individual Differences. 2000;29(2):313-320. https://doi.org/10.1016/S0191-8869(99)00195-6

46. MacCann C, Joseph DL, Newman DA, Roberts RD. Emotional intelligence is a second-stratum factor of intelligence: Evidence from hierarchical and bifactor models. Emotion. 2014;14(2):358-374. https://doi.org/10.1037/a0034755

47. Mayer JD, Caruso DR, Salovey P. Emotional intelligence meets traditional standards for an intelligence. Intelligence. 1999;27(4):267-298. https://doi.org/10.1016/S0160-2896(99)00016-1

48. O'Connor PJ, Hill A, Kaya M, Martin B. The measurement of emotional intelligence: A critical review of the literature and recommendations for researchers and practitioners. Frontiers in Psychology. 2019;10:1116. https://doi.org/10.3389/fpsyg.2019.01116

49. Zeidner M, Hadar D, Matthews G, Roberts RD. Personal factors related to compassion fatigue in health professionals. Anxiety, Stress & Coping. 2013;26(6):595-609. https://doi.org/10.1080/10615806.2013.777045

50. Tett RP, Freund KA, Christiansen ND, Fox KE, Coaster J. Faking on self-report emotional intelligence and personality tests: Effects of faking opportunity, cognitive ability, and job type. Personality and Individual Differences. 2012;52(2):195-201. https://doi.org/10.1016/j.paid.2011.10.017

51. Schutte NS, Malouff JM, Hall LE, Haggerty DJ, Cooper JT, Golden CJ, Dornheim L. Development and validation of a measure of emotional intelligence. Personality and Individual Differences. 1998;25(2):167-177. https://doi.org/10.1016/S0191-8869(98)00001-4

52. Saklofske DH, Austin EJ, Minski PS. Factor structure and validity of a trait emotional intelligence measure. Personality and Individual Differences. 2003;34(4):707-721. https://doi.org/10.1016/S0191-8869(02)00056-9

53. Gignac GE, Palmer BR, Manocha R, Stough C. An examination of the factor structure of the Schutte self-report emotional intelligence (SSREI) scale via confirmatory factor analysis. Personality and Individual Differences. 2005;39(6):1029-1042. https://doi.org/10.1016/j.paid.2005.03.014

54. Brackett MA, Mayer JD. Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. Personality and Social Psychology Bulletin. 2003;29(9):1147-1158.

55. Craparo G, Magnano P, Faraci P. Psychometric properties of the Italian version of the self-report emotional intelligence test (SREIT). TPM: Testing, Psychometrics, Methodology in Applied Psychology. 2014;21(2):121-133. https://doi.org/10.4473/TPM21.2.1

56. Musonda A, Shumba O, Tailoka FP. Validation of the Schutte Self Report Emotional Intelligence Scale in a Zambian context. European Journal of Psychology and Educational Research. 2020;2(2):31-41. https://doi.org/10.12973/ejper.2.2.31

57. Bucich M, MacCann C. Emotional intelligence research in Australia: Past contributions and future directions. Australian Journal of Psychology. 2019;71(1):59-67. https://doi.org/10.1111/ajpy.12231

58. Heffernan M, Quinn Griffin MT, McNulty SR, Fitzpatrick JJ. Self-compassion and emotional intelligence in nurses. International Journal of Nursing Practice. 2010;16(4):366-373. https://doi.org/10.1111/j.1440-172X.2010.01853.x

59. Şenyuva E, Kaya H, Işik B, Bodur G. Relationship between self-compassion and emotional intelligence in nursing students. International Journal of Nursing Practice. 2014;20(6):588-596. https://doi.org/10.1111/ijn.12204

60. Beldon R, Garside J. Burnout in frontline ambulance staff. Journal of Paramedic Practice. 2022;14(1):6-14. https://doi.org/10.12968/jpar.2022.14.1.6

61. Clompus S, Albarran J. Exploring the nature of resilience in paramedic practice: A psycho-social study. International Emergency Nursing. 2016;28*:*1–7. https://doi.org/10.1016/j.ienj.2015.11.006

62. Granter E, Wankhade P, McCann L, Hassard J, Hyde P. Multiple dimensions of work intensity: Ambulance work as edgework. Work, Employment and Society. 2019; 33(2):280-297. https://doi.org/10.1177/0950017018759207

63. Lawn S, Roberts L, Willis E, Couzner L, Mohammadi L, Goble E. The effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel: A systematic review of qualitative research. BMC Psychiatry. 2020;20(1). https://doi.org/10.1186/s12888-020-02752-4

64. McCann L, Granter E, Hyde P, Hassard J. Still blue-collar after all these years? An ethnography of the professionalization of emergency ambulance work. Journal of Management Studies. 2013;50(5):750-776. https:// doi.org/10.1111/joms.12009

65. NHS Providers. The ambulance service: Understanding the new standards. UK; 2019. https://nhsproviders.org/the-ambulance-service-understanding-the-new-standards

66. Wankhade P. Staff perceptions and changing role of pre-hospital profession in the UK ambulance services: An exploratory study. International Journal of Emergency Services. 2016;5(2):126–144. https://doi.org/10.1108/ IJES-02-2016-0004.

67. Nelson PA, Cordingley L, Kapur N, Chew-Graham CA, Shaw J, Smith S, McGale B, McDonnell S. 'We're the first port of call'–Perspectives of ambulance staff on responding to deaths by suicide: A qualitative study. Frontiers in Psychology. 2020;11(722). https://doi.org/10.3389/fpsyg.2020.00722

68. Brewis J, Godfrey R. From extreme to mundane? The changing face of paramedicine in the UK ambulance service. In: Wankhade P, McCann L, Murphy P, editors. Critical perspectives on the management and organization of emergency services. Oxford (UK): Routledge; 2019. p. 179–199. http://dx.doi.org/doi:10.4324/9781315104447

69. McCann L, Granter E. Beyond 'blue-collar professionalism': continuity and change in the professionalization of uniformed emergency service work. Journal of Professions and Organization. 2019;6(2):213– 232. https://doi-org.ezproxy.lancs.ac.uk/10.1093/jpo/joz006

70. Nauman S, Raja U, Haq IU, Bilal W. Job demand and employee well-being: A moderated mediation model of emotional intelligence and surface acting. Personnel Review. 2019;48(5):1150-1168. https://doi-org.ezproxy.lancs.ac.uk/10.1108/PR-04-2018-0127

71. Bennett P, Williams Y, Page N, Hood K, Woollard M, Vetter N. Associations between organizational and incident factors and emotional distress in emergency ambulance personnel. British Journal of Clinical Psychology. 2005;44(2):215-226. https://doi.org/10.1348/014466505X29639

72. Petrie K, Milligan-Saville J, Gayed A, Deady M, Phelps A, Dell L, Forbes D, Bryant RA, Calvo RA, Glozier N, Harvey SB. Prevalence of PTSD and common mental disorders amongst

ambulance personnel: A systematic review and meta-analysis. Social Psychiatry and Psychiatric Epidemiology. 2018;53:897-909. https://doi.org/10.1007/s00127-018-1539-5

73. Billings J, Ching BC, Gkofa V, Greene T, Bloomfield M. Healthcare workers' experiences of working on the frontline and views about support during COVID-19 and previous pandemics: A systematic review and qualitative meta-synthesis. Research Square. 2021:1-30. https://doi.org/10.21203/rs.3.rs-322448/v

74. Greene T, Harju-Seppänen J, Adeniji M, Steel C, Grey N, Brewin CR, Bloomfield MA, Billings J. Predictors and rates of PTSD, depression and anxiety in UK frontline health and social care workers during COVID-19. European Journal of Psychotraumatology. 2021;12(1):1882781. https://doi.org/10.1080/20008198.2021.1882781

75. Rossi R, Socci V, Pacitti F, Di Lorenzo G, Di Marco A, Siracusano A, Rossi A. Mental health outcomes among frontline and second-line health care workers during the coronavirus disease 2019 (COVID-19) pandemic in Italy. JAMA Network Open. 2020;3(5):e2010185. https://doi/org/10.1001/jamanetworkopen.2020.1018559

76. Spoorthy MS, Pratapa SK, Mahant S. Mental health problems faced by healthcare workers due to the COVID-19 pandemic–A review. Asian Journal of Psychiatry. 2020;51:102119. https://doi.org/10.1016/j.ajp.2020.102119

77. Billings J, Abou Seif N, Hegarty S, Ondruskova T, Soulios E, Bloomfield M, Greene T. What support do frontline workers want? A qualitative study of health and social care workers' experiences and views of psychosocial support during the COVID-19 pandemic. PLoS One. 2021;16(9):e0256454. https://doi.org/10.1371/journal.pone.0256454

78. Heath G, Wankhade P, Murphy P. Exploring the wellbeing of ambulance staff using the 'public value' perspective: opportunities and challenges for research. Public Money and Management. 2021:1-11. https://doi.org/10.1080/09540962.2021.1899613

79. Petrie K, Smallwood N, Pascoe A, Willis K. Mental health symptoms and workplace challenges among Australian paramedics during the COVID-19 pandemic. International Journal of Environmental Research and Public Health. 2022;19(2):1004. https://doi.org/10.3390/ijerph1902100

Section Four: Ethics

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Doctorate in Clinical Psychology

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The Relationship Between Emotional Intelligence, Self-Compassion and Wellbeing in Ambulance Staff Research Protocol - version 0.7

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Field Supervisor: Dr Amy Ashton – Head of Clinical Health Psychology Service, Consultant Clinical Psychologist for Major Trauma, Royal Preston Hospital

Introduction

Healthcare workers (HCWs) in the UK are at risk of negative mental health outcomes, reporting higher than average levels of stress, anxiety and depression when compared to staff in other occupations (Health and Safety Executive, 2020). The NHS Long Term Plan (NHS England, 2019) recognised the importance of staff wellbeing and set out an aim to improve the health and wellbeing of HCWs.

Research into individual factors that affect HCWs' wellbeing has included studies of Emotional Intelligence (EI), defined as a broad intelligence that involves being able to accurately perceive emotions, integrate emotions to facilitate thought, understand emotions and manage the emotions of oneself and others (Mayer & Salovey, 1997) and studies on self-compassion. Neff (2003a) described the three key components of self-compassion as: (a) self-kindness - offering oneself understanding and comfort, rather than self-judgement; (b) common humanity - perceiving suffering as part of the human condition, rather than feeling isolated; and (c) mindfulness - the ability to accept experiences without over-identifying with them.

Greater levels of both EI and self-compassion in HCWs have been associated with lower levels of compassion fatigue, defined as the negative outcomes of helping, such as low mood, trauma and feeling overwhelmed (Figley, 1995) as well as lower levels of burnout and mental health symptoms (e.g. Buceta et al., 2019; Duarte & Pinto-Gouveia, 2017; Zeidner et al., 2013). This suggests that EI and self-compassion may buffer HCWs against negative wellbeing outcomes. EI and self-compassion may also lead to positive wellbeing outcomes in HCWs, such as increased satisfaction with both their job and life overall (e.g. Gong et al., 2020) and increased compassion satisfaction, the positive feeling helpers experience from being able to help others (e.g. Buceta et al., 2019; Duarte et al., 2016, Zeidner & Hadar, 2014). Research indicates that it is possible to increase HCW's EI and self-compassion using a variety of interventions (Sarabia-Cobo et al., 2017; Wasson et al., 2020).

Much of the research into EI and self-compassion in HCWs focuses on select professional groups, mainly nurses. As the relationships between factors such as self-compassion and wellbeing can differ between HCW groups (Dev et al., 2020), the above findings may not apply to other professional groups. For example, ambulance staff have rarely been included in such research despite experiencing significant workplace stressors (Granter et al., 2019) which place them at increased risk of negative outcomes, such as Post-Traumatic Stress Disorder (PTSD), depression, anxiety (Lawn et al., 2020) and suicide (Office for National Statistics [ONS], 2017). Where ambulance staff have been included in such studies, they are often combined with other professional groups, such as firefighters. One such study found greater levels of EI to be related to fewer PTSD symptoms in a group of 55 firefighters and emergency medical staff (Rinker, 2016), while another found that greater levels of EI buffered against negative wellbeing outcomes in 207 first responders (Nauman

et al., 2019). This suggests that ambulance staff may experience a positive relationship between EI and wellbeing, similar to that found in other HCWs.

The limited research into self-compassion in ambulance staff is more mixed. In a systematic review of 31 studies with first responders, mindfulness, a key component of self-compassion was related to lower levels of compassion fatigue, whereas self-judgement was related to higher levels of compassion fatigue (Greinacher et al., 2019). This would suggest that greater self-compassion is beneficial to the wellbeing of emergency workers such as ambulance staff. However, a study with 134 experienced paramedics unexpectedly found lower levels of self-compassion to be related to greater psychological wellbeing (Mitmansgruber et al., 2008), suggesting that individual factors such as self-compassion may play a different role in the wellbeing of ambulance staff than they do in other HCWs.

Further, studies of wellbeing in HCWs mainly focus on negative wellbeing outcomes such as burnout and compassion fatigue. As wellbeing is more than the absence of difficulties, encompassing positive emotions, relationships, sense of meaning, engagement and accomplishment (Seligman, 2018), the inclusion of measures of positive wellbeing outcomes, such as compassion satisfaction and psychological wellbeing would lead to a more holistic understanding of the impact of EI and self-compassion on wellbeing.

Thus, there is a need to investigate the relationship between individual factors such as EI and self-compassion and both positive and negative aspects of wellbeing in ambulance staff. Understanding these relationships would aid ambulance services in finding ways to appropriately support staff wellbeing in their organisations.

This study will aim to explore the relationships between EI, self-compassion and wellbeing in ambulance staff. Wellbeing measures will include compassion satisfaction, compassion fatigue and psychological wellbeing in order to capture positive and negative

aspects of ambulance staff wellbeing. It is hypothesised that EI and self-compassion will account for a significant amount of variance in wellbeing, above that explained by demographic variables, such that greater levels of both EI and self-compassion will be associated with higher levels of perceived psychological wellbeing and compassion satisfaction, and lower levels of compassion fatigue in ambulance staff.

Methods

Participants

Participants will be staff who work on emergency ambulances for the NHS and have patient contact in this role. Participants will be recruited through two ambulance services [redacted]. Following ethical approval, [redacted] and [redacted] will introduce the study to all frontline staff by sending the poster advert for the online survey to their staff via email. This will include the link to the survey. Personal identifiable information will not need to be screened as the survey links will be sent to all frontline staff via email addresses which are already held by [redacted] and [redacted].

The following details will be collected as part of the survey to provide demographic information about the participant sample: gender, ethnicity, age, job role and years of experience working on emergency ambulances.

The regression model will use a medium effect size (0.15), chosen because medium effect sizes have been found in research which explored the relationship between wellbeing and EI (de Looff et al., 2019; Gong et al., 2020), and wellbeing and self-compassion (Buceta et al., 2019; Dev et al., 2020), in other HCWs. For a regression model including two to ten predictor variables and based on a medium effect size with power of 0.8 and alpha level of p=.05, the target sample size will be between 68 and 119 participants, as recommended by Field (2018).

Broad inclusion criteria have been used to ensure the sample is as representative as possible of the ambulance workforce.

Inclusion Criteria

- Staff members who work on NHS emergency ambulances in any role.
- Staff have patient contact in the above role.
- Working age adults aged 18 and over.

Exclusion Criteria

- Not currently working for the NHS on emergency ambulances.
- No patient contact in role.

Staff will confirm they meet the inclusion criteria as part of the consent form.

Design

This study uses quantitative methods, utilising a within-participants, cross-sectional design to explore the relationship between EI, self-compassion and wellbeing in ambulance staff. Questionnaires will be the data collection method. The outcome measures will be participants' compassion satisfaction, compassion fatigue and psychological wellbeing scores.

Data will be collected anonymously online which will reduce the likelihood of participants responding in a socially desirable manner or of the researcher influencing the responses. The survey will be presented in the same way and same order to all participants to reduce variability in the procedures.

Materials

Emotional Intelligence: The Self-Report Emotional Intelligence Test (SREIT; Schutte et al., 1998) is a 33-item measure of EI ability. Responses to each item are scored from 1 (Strongly disagree) to 5 (Strongly agree). This provides a total EI score and four subscale

scores: optimism/mood regulation, appraisal of emotions, social skills and utilization of emotions.

Schutte et al. (1998) found the scale to have good internal reliability (.90), test-retest reliability and convergent and discriminant validity. This is a widely used measure of EI, cited over 3,000 times with a variety of populations, and is freely available to researchers (O'Connor et al., 2019). It has been used in studies with other HCWs, including nurses, mental healthcare workers and doctors (Karimi et al., 2014; Ng et al., 2014; Zeidner & Hadar, 2014) and found to have good internal reliability in these samples (.84 – .92)

Self-Compassion: The Self-Compassion Scale (SCS; Neff, 2003b) is a 26-item questionnaire which is free to use for research purposes. Responses are scored from 1 (Almost never) to 5 (Almost always) to give an overall self-compassion score and six subscale scores: self-kindness, mindfulness, common humanity, self-judgement, over-identification and isolation.

Neff (2003b) found good internal reliability for the total scale (.92), with subscales obtaining scores between .75 and .81, and good test-retest reliability and construct, convergent and discriminant validity. Though the SCS was normed on student populations, Neff (2016) reviewed studies using the SCS which found good reliability and validity in a range of samples, and Buceta et al. (2019) found good internal reliability with participants from a variety of HCW backgrounds.

Compassion Fatigue/Compassion Satisfaction: The Professional Quality of Life Scale (ProQOL-21; Heritage et al., 2018) will be used to measure professional wellbeing. The ProQOL-21 is an alternative method of scoring the 30-item ProQOL-5 (Stamm, 2010) to give a measure of compassion satisfaction and compassion fatigue and is freely available to researchers. Responses are scored from 1 (Never) to 5 (Very often).

The ProQOL-5 was developed for use with people in caring or helping professions and has been used extensively in research. While good reliability and validity have been reported for the ProQOL-5, Heritage et al. (2018) argued that the burnout and secondary traumatic stress scales had poor construct validity, therefore combined them into one scale called compassion fatigue. Heritage et al. (2018) found that the revised scales in the ProQOL-21 had good internal reliability (.90) and construct validity.

Psychological Wellbeing: The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al., 2007) is a 14-item scale, with responses scored from 1 (None of the time) to 5 (All of the time) to provide an overall wellbeing score.

Tennant et al. (2007) found good internal reliability in both student (.89) and general population (.91) samples, good test-retest reliability and good face and content validity. While this has not been normed with HCWs, it has been extensively validated with large samples of adults in the UK and across cultures (Stewart-Brown et al., 2011). It is freely available for use in research following registration.

Procedure

Potential participants will receive an email from their employing Trust inviting them to participate. The email will include brief details about the study, a poster advert and a link to the online survey. Those who choose to participate will be able to access the link on a smartphone, tablet or computer.

The online survey will be hosted on the website Qualtrics. Participants will first see the Participant Information Sheet which will provide further details about the study and the use of their data. There will be no formal procedures to gain written or verbal consent and names will not be collected to ensure the survey is anonymous. However, at the end of the Participant Information Sheet there will be a reduced consent form which will conclude with

the following sentence: “By continuing with the survey, you agree that you understand the points outlined in the participant information sheet version… and the above consent form, and consent to **taking part in the current study.”** Thus, continuing to the survey will be taken as participants’ consent.

Those who consent to participate will then be presented with the questionnaires in the following order: Demographic Questionnaire, SREIT (Schutte et al., 1998), SCS (Neff, 2003b), ProQOL-21 (Heritage et al., 2018), and WEMWBS (Tennant et al., 2007). During completion, any missed questions will be highlighted and participants will be asked to return to complete the question to reduce missing data points.

After completing the questionnaires, the Debrief Sheet will be presented. On the final page, participants will have the option of providing their email address in order to receive a summary of the results following completion of the study. They will not receive feedback on their individual scores. The whole procedure should take no longer than 20-30 minutes.

Proposed Analysis

Questionnaire scores will be entered into SPSS by the researcher. Data will first be checked for outliers and normality of distribution in order to allow for parametric tests of correlation. If data are normal, Pearson’s correlations will be calculated between predictor and outcome variables.

Hierarchical multiple regression will be conducted to explore the relationships between predictor variables and outcome variables. Following previous research, demographic variables will be entered in the first block. As prior research suggests a stronger role for EI than self-compassion in the wellbeing of ambulance staff, EI will be entered in the next block, with self-compassion being entered last. EI and self-compassion

subscales will be entered separately in each block if a sufficient sample size is reached, in order to explore the predictive value of subcomponents of EI and self-compassion.

Practical Issues

Participant recruitment has been discussed with research leads at [redacted] and [redacted]. Ambulance staff have been sent several surveys over the past year which may reduce the number of people willing to participate, though each service indicated that a typical response rate to surveys is around 70-100 staff members. Therefore, both services will send the survey to all frontline staff members, which should achieve the target sample size. Further, a date for sending the surveys will be agreed with both services so that it does not coincide with other Trust surveys. If the required sample size is not met initially, the research leads at [redacted] and [redacted] have also agreed to distribute the survey to their members in order to reach a wider number of potential participants. However, if initial response rates to the surveys are very low, the study may be adapted into a qualitative study. This would involve asking a small number of participants about their experiences of EI, self-compassion and wellbeing in order to explore the relationships between these factors. This would require far fewer participants and would allow a more in-depth exploration of the factors. In this case, ethics application and agreement from the Trusts would be re-submitted.

With regards to data storage, completed questionnaires will be stored electronically in a password protected file space on University approved secure cloud storage. No paper data will be collected. The online surveys will be anonymous and no identifiable information will be collected as part of the survey, but there will be an option for participants to provide an email address should they wish to receive a summary of the research findings. These contact details will be stored in a separate password protected file space on University

approved secure cloud storage and will be deleted once the summary has been sent out. Once the study has been completed, the completed questionnaire data will be retained for storage by the DClinPsy admin team. In order to transfer data for long-term storage, data will be encrypted and transferred electronically to the Research Coordinator using a secure method which is supported by the University. The data will be retained for 10 years before deletion.

The questionnaires to be used are free for researchers. The WEMWBS (Tennant et al., 2007) requires registration prior to being used for research for non-commercial purposes. This registration has been completed.

Ethical Concerns

While stakeholders felt the likelihood of distress resulting from participation was low, it is possible that reflecting on EI, self-compassion and wellbeing might cause distress for some participants. Further, researchers will be able to see where ambulance staff have indicated high levels of compassion fatigue or low levels of wellbeing. As the data will be anonymous, it will not be possible to offer individual support to participants. To address this, details of ambulance staff support services and general wellbeing support services will be included on the Participant Information Sheet and Debrief Sheet in order to signpost participants to appropriate support services. The contact details of the researcher and supervisor will be included in the Participant Information Sheet should participants have any concerns regarding the study itself.

Inviting frontline emergency healthcare workers to spend time participating in research during a pandemic may have ethical implications. Therefore, short questionnaires will be chosen over lengthier questionnaires where appropriate in order to reduce the time burden on participants. Further, potential participants will not be offered monetary

incentives or rewards for participation in order to ensure participants do not feel pressured or coerced and that participation is optional.

Participation will be confidential and anonymous. [redacted] and [redacted] will send the survey link to their employees, but will not receive information about whether any staff member has participated or not. There is no expectation that participants will complete the survey in work time or on work premises, therefore can participate confidentially by choosing when and where they complete the survey. As the surveys are anonymous, participants will be informed that no identifiable information will be collected and that they can stop the survey at any time, but that it will not be possible to withdraw their data from the analysis once it has been submitted.

Participation will only be possible online. This might mean that people without access to the internet or digital equipment may be excluded from participation. Therefore, the survey will be accessible on smartphones, tablets, laptops and computers, in order to maximise the number of people who are able to participate in this format.

Timescale

Data collection will begin in January 2022 and should end by June 2022. Data collection may extend beyond this period if participants numbers are low initially. Results will be fed back to participants via an email summary once the study has been completed and the thesis submitted in March 2023.

References

Buceta, M. I., Bermejo, J. C., & Villacieros, M. (2019). Enhancer elements of compassion satisfaction in healthcare professionals. *Anales de Psicología, 35*(2), 323-331. Retrieved from PsychINFO database.

de Looff, P., Didden, R., Embregts, P., & Nijman, H. (2019). Burnout symptoms in forensic mental health nurses: Results from a longitudinal study. *International Journal of Mental Health Nursing, 28*(1), 306-317. https://doi.org/10.1111/inm.12536

Dev, V., Fernando, A. T. III., & Consedine, N. S. (2020). Self-compassion as a stress moderator: A cross-sectional study of 1700 doctors, nurses, and medical students. *Mindfulness, 11*(5), 1170-1181. https://doi.org/10.1007/s12671-020-01325-6

Duarte, J., & Pinto-Gouveia, J. (2017). Mindfulness, self-compassion and psychological inflexibility mediate the effects of a mindfulness-based intervention in a sample of oncology nurses. *Journal of Contextual Behavioral Science, 6*(2), 125-133. https://doi.org/10.1016/j.jcps.2017.03.002

Duarte, J., Pinto-Gouveia, J., & Cruz, B. (2016). Relationships between nurses' empathy, self-compassion and dimensions of professional quality of life: A cross-sectional study. *International Journal of Nursing Studies, 60*, 1-11. https://doi.org/10.1016/j.ijnurstu.2016.02.015

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (Fifth Edition.). SAGE Publications.

Figley, C. R. (1995). *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized*. New York: Brunner/Mazel.

Gong, Y., Wu, Y., Huang, P., Yan, X., & Luo, Z. (2020). Psychological empowerment and work engagement as mediating roles between trait emotional intelligence and job satisfaction. *Frontiers in Psychology, 11*. https://doi.org/10.3389/fpsyg.2020.00232

Granter, E., Wankhade, P., McCann, L., Hassard, J., & Hyde, P. (2019). Multiple dimensions of work intensity: Ambulance work as edgework. *Work, Employment and Society, 33*(2), 280-297. https://doi.org/10.1177/0950017018759207

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

Health and Safety Executive. (2020). *Work-related stress, anxiety or depression statistics in Great Britain, 2020.* https://www.hse.gov.uk/statistics/causdis/stress.pdf

Heritage, B., Rees, C. S., & Hegney, D. G. (2018). The ProQOL-21: A revised version of the Professional Quality of Life (ProQOL) scale based on Rasch analysis. *PloS one*, *13*(2), e0193478. https://doi.org/10.1371/journal.pone.0193478

Karimi, L., Leggat, S. G., Donohue, L., Farrell, G., & Couper, G. E. (2014). Emotional rescue: The role of emotional intelligence and emotional labour on well-being and job-stress among community nurses. *Journal of Advanced Nursing, 70*(1), 176-186. https://doi.org/10.1111/jan.12185

Lawn, S., Roberts, L., Willis, E., Couzner, L., Mohammadi, L., & Goble, E. (2020). The effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel: A systematic review of qualitative research. *BMC Psychiatry, 20*(1). https://doi.org/10.1186/s12888-020-02752-4

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implications* (pp. 3-34). New York: Basic Books.

Mitmansgruber, H., Beck, T. N., & Schüßler, G. (2008). "Mindful helpers": Experiential avoidance, meta-emotions, and emotion regulation in paramedics. *Journal of Research in Personality, 42*(5), 1358-1363. https://doi.org/10.1016/j.jrp.2008.03.012

Nauman, S., Raja, U., Haq, I. U., & Bilal, W. (2019). Job demand and employee well-being: A moderated mediation model of emotional intelligence and surface acting. *Personnel Review*, *48*(5), 1150-1168. https://doi.org/10.1108/PR-04-2018-0127

Neff, K. D. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85-101. https://doi.org/10.1080/15298860309032

Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*(3), 223-250. https://doi.org/10.1080/15298860309027

Neff, K. D. (2016). The Self-Compassion Scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness, 7*(1), 264-274. https://*doi*.org/*10.1007*/*s12671*-015-0479-3

Ng, S. M., Ke, G. N., & Raymond, W. (2014). The mediating role of work locus of control on the relationship among emotional intelligence, organisational citizenship behaviours, and mental health among nurses. *Australian Journal of Psychology, 66*(4), 207-215. https://*doi*.org/*10.1111*/*ajpy*.*12049*

NHS England. (2019). *NHS Long Term Plan*. https://www.longtermplan.nhs.uk/

O'Connor, P. J., Hill, A., Kaya, M., & Martin, B. (2019). The measurement of emotional intelligence: A critical review of the literature and recommendations for researchers

and practitioners. *Frontiers in Psychology, 10*, 1116-1116. https://*doi*.org/*10.3389/fpsyg.2019.01116*

Office for National Statistics. (2017). *Suicide by occupation, England: 2011 to 2015.* https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/suicidebyoccupation/england2011to2015

Rinker, J. (2016). *The relationship between emotional intelligence and PTSD symptoms in firefighters and emergency medical personnel.* (Publication No. 3664296) [Doctoral dissertation, Adler School of Professional Psychology, Chicago, USA]. ProQuest Dissertations and Theses Global.

Sarabia-Cobo, C. M., Suárez, S. G., Crispín, E. J. M., Cobo, A. B. S., Pérez, V., de Lorena, P., Rodríguez, C. R., & Gross, L. S. (2017). Emotional intelligence and coping styles: An intervention in geriatric nurses. *Applied Nursing Research, 35*, 94-98. https://doi.org/10.1016/j.apnr.2017.03.001

Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences, 25*, 167-177. https://doi.org/10.1016/S0191-8869(98)00001-4

Seligman, M. (2018). PERMA and the building blocks of well-being. *The Journal of Positive Psychology, 13*(4), 333-335. https://doi.org/10.1080/17439760.2018.1437466

Stamm, B. H. (2010). The concise ProQOL manual. Retrieved from https://proqol.org/proqol-manual.

Stewart-Brown, S. L., Platt, S., Tennant, A., Maheswaran, H., Parkinson, J., Weich, S., Tennant, R., Taggart, F., & Clarke, A. (2011). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): a valid and reliable tool for measuring mental well-being in

diverse populations and projects. *Journal of Epidemiology and Community Health*, *65*(2), A38-A39. http://dx.doi.org/10.1136/jech.2011.143586.86

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes*, *5*(1), 1-13. https://doi.org/10.1186/1477-7525-5-63

Wasson, R. S., Barratt, C., & O'Brien, W. H. (2020). Effects of mindfulness-based interventions on self-compassion in health care professionals: A meta-analysis. *Mindfulness, 11*(8), 1914-1934. https://doi.org/10.1007/s12671-020-01342-5

Zeidner, M., & Hadar, D. (2014). Some individual difference predictors of professional well-being and satisfaction of health professionals. *Personality and Individual Differences, 65*, 91-95. https://doi.org/10.1016/j.paid.2014.01.032

Zeidner, M., Hadar, D., Matthews, G., & Roberts, R. D. (2013). Personal factors related to compassion fatigue in health professionals. *Anxiety, Stress and Coping: An International Journal, 26*(6), 595-609. https://doi.org/10.1080/10615806.2013.777045

Appendix A: IRAS Application Form

IRAS Project Filter

The integrated dataset required for your project will be created from the answers you give to the following questions. The system will generate only those questions and sections which (a) apply to your study type and (b) are required by the bodies reviewing your study. Please ensure you answer all the questions before proceeding with your applications.

Please complete the questions in order. If you change the response to a question, please select 'Save' and review all the questions as your change may have affected subsequent questions.

Please enter a short title for this project (maximum 70 characters)
Ambulance staff: emotional intelligence, self-compassion and wellbeing

1. Is your project research?

(●) Yes ( ) No

2. Select one category from the list below:

( ) Clinical trial of an investigational medicinal product
( ) Combined trial of an investigational medicinal product and an investigational medical device
( ) Clinical investigation or other study of a medical device
( ) Other clinical trial to study a novel intervention or randomised clinical trial to compare interventions in clinical practice
( ) Basic science study involving procedures with human participants
(●) Study administering questionnaires/interviews for quantitative analysis, or using mixed quantitative/qualitative methodology
( ) Study involving qualitative methods only
( ) Study limited to working with human tissue samples (or other human biological samples) and data (specific projectonly)
( ) Study limited to working with data (specific project only)
( ) Research tissue bank ( ) Research database

If your work does not fit any of these categories, select the option below: ( )
Other study

2a. Please answer the following question(s):

a) Does the study involve the use of any ionising radiation? ( ) Yes (●) No

b) Will you be taking new human tissue samples (or other human biological samples)? ( ) Yes (●) No

c) Will you be using existing human tissue samples (or other human biological samples)? ( ) Yes (●) No

3. In which countries of the UK will the research sites be located?*(Tick all that apply)*

☑ England
☐ Scotland
☐ Wales
☐ Northern Ireland

3a. In which country of the UK will the lead NHS R&D office be located:

◉ England
○ Scotland
○ Wales
○ Northern Ireland
○ This study does not involve the NHS

4. Which applications do you require?

☑ IRAS Form
☐ Confidentiality Advisory Group (CAG)
☐ Her Majesty's Prison and Probation Service (HMPPS)

Most research projects require review by a REC within the UK Health Departments' Research Ethics Service. Is your study exempt from REC review?

◉ Yes ○ No

4b. Please confirm the reason(s) why the project does not require review by a REC within the UK Health Departments Research Ethics Service:

☐ Projects limited to the use of samples/data samples provided by a Research Tissue Bank (RTB) with generic ethical approval from a REC, in accordance with the conditions of approval.
☐ Projects limited to the use of data provided by a Research Database with generic ethical approval from a REC, in accordance with the conditions of approval.
☐ Research limited to use of previously collected, non-identifiable information
☐ Research limited to use of previously collected, non-identifiable tissue samples within terms of donor consent ☐
Research limited to use of acellular material
☐ Research limited to use of the premises or facilities of care organisations (no involvement of patients/service users as participants)
☑ Research limited to involvement of staff as participants (no involvement of patients/service users as participants)

5. Will any research sites in this study be NHS organisations?

◉ Yes ○ No

5a. Are all the research costs and infrastructure costs (funding for the support and facilities needed to carry out the research e.g. NHS support costs) for this study provided by a NIHR Biomedical Research Centre (BRC), NIHR Applied Research Collaboration (ARC), NIHR Patient Safety Translational Research Centre (PSTRC), or an NIHR Medtech and In Vitro Diagnostic Co-operative (MIC) in all study sites?

Please see information button for further details.

○ Yes ◉ No

Please see information button for further details.

5b. Do you wish to make an application for the study to be considered for NIHR Clinical Research Network (CRN) Support and inclusion in the NIHR Clinical Research Network Portfolio?

Please see information button for further details.

○ Yes ◉ No

The NIHR Clinical Research Network (CRN) provides researchers with the practical support they need to make clinical studies happen in the NHS in England e.g. by providing access to the people and facilities needed to carry out research "on the ground".

If you select yes to this question, information from your IRAS submission will automatically be shared with the NIHR CRN. ***Submission of a Portfolio Application Form (PAF) is no longer required.***

6. Do you plan to include any participants who are children?

○ Yes ◉ No

7. Do you plan at any stage of the project to undertake intrusive research involving adults lacking capacity to consent for themselves?

○ Yes ◉ No

Answer Yes if you plan to recruit living participants aged 16 or over who lack capacity, or to retain them in the study following loss of capacity. Intrusive research means any research with the living requiring consent in law. This includes use of identifiable tissue samples or personal information, except where application is being made to the Confidentiality Advisory Group to set aside the common law duty of confidentiality in England and Wales. Please consult the guidance notes for further information on the legal frameworks for research involving adults lacking capacity in the UK.

8. Do you plan to include any participants who are prisoners or young offenders in the custody of HM Prison Service or who are offenders supervised by the probation service in England or Wales?

○ Yes ◉ No

9. Is the study or any part of it being undertaken as an educational project?

◉ Yes ○ No

Please describe briefly the involvement of the student(s):
Trainee clinical psychologist to complete the study as part of DClinPsy doctoral thesis, under supervision of senior lecturer at Lancaster University.

9a. Is the project being undertaken in part fulfilment of a PhD or other doctorate?

◉ Yes ○ No

10. Will this research be financially supported by the United States Department of Health and Human Services or any of its divisions, agencies or programs?

○ Yes ◉ No

11. Will identifiable patient data be accessed outside the care team without prior consent at any stage of the project (including identification of potential participants)?

○ Yes ◉ No

Integrated Research Application System
Application Form for Research administering questionnaires/interviews for quantitative analysis or mixed methodology study

IRAS Form (project information)

Please refer to the E-Submission and Checklist tabs for instructions on submitting this application.

The Chief Investigator should complete this form. Guidance on the questions is available wherever you see this symbol displayed. We recommend reading the guidance first. The complete guidance and a glossary are available by selecting Help.

Please define any terms or acronyms that might not be familar to lay reviewers of the application.

Short title and version number: (maximum 70 characters - this will be inserted as header on all forms) Ambulance staff: emotional intelligence, self-compassion and wellbeing

Please complete these details after you have booked the REC application for review.

REC Name:
Non-REC Studies: England

REC Reference Number: 22/HRA/0477

Submission date: 02/02/2022

PART A: Core study information

1. ADMINISTRATIVE DETAILS

A1. Full title of the research:

The relationship between emotional intelligence, self-compassion and wellbeing in ambulance staff.

A2-1. Educational projects

Name and contact details of student(s):

Student 1

	Title	Forename/Initials	Surname
	Miss	Beth	Parker
Address	Health Innovation One Sir John Fisher Drive Lancaster		
Post Code	LA1 4AT		
E-mail	b.parker@lancaster.ac.uk		

Telephone 07596590946

Fax

Give details of the educational course or degree for which this research is being undertaken: Name and level of course/ degree:

Doctorate in Clinical Psychology

Name of educational establishment:
Lancaster University

Name and contact details of academic supervisor(s):

Academic supervisor 1

	Title	Forename/Initials	Surname
	Professor	Bill	Sellwood
Address	Health Innovation One Sir John Fisher Drive Lancaster		
Post Code	LA1 4AT		
E-mail	b.sellwood@lancaster.ac.uk		
Telephone			
Fax			

Academic supervisor 2

	Title	Forename/Initials	Surname
	Dr	Amy	Ashton
Address	Clinical Health Psychology Service, Royal Preston Hospital Sharoe Green Lane, Fulwood Preston		
Post Code	PR2 9HT		
E-mail	amy.ashton@lthtr.nhs.uk		
Telephone	01772 716565		
Fax			

Please state which academic supervisor(s) has responsibility for which student(s):
Please click "Save now" before completing this table. This will ensure that all of the student and academic supervisor details are shown correctly.

Student(s)	**Academic supervisor(s)**
Student 1 Miss Beth Parker	☑ Professor Bill Sellwood ☐ Dr Amy Ashton

A copy of a current CV for the student and the academic supervisor (maximum 2 pages of A4) must be submitted with the application.

A2-2. Who will act as Chief Investigator for this study?

- ○ Student
- ◉ Academic supervisor
- ○ Other

A3-1. Chief Investigator:

	Title	Forename/Initials	Surname
	Professor	Bill	Sellwood
Post	Professor of Clinical Psychology		
Qualifications	PhD		
ORCID ID	0000 0001 8260 9503	Employer	Lancaster University
Work Address	Health Innovation One Sir John Fisher Drive Lancaster		
Post Code	LA1 4AT		
Work E-mail	b.sellwood@lancaster.ac.uk	* Personal E-mail	b.sellwood@lancaster.ac.uk
Work Telephone	01524 592691		
* Personal Telephone/Mobile	01524 592691		
Fax	01524 592691		

** This information is optional. It will not be placed in the public domain or disclosed to any other third party without prior consent.*
A copy of a current CV (maximum 2 pages of A4) for the Chief Investigator must be submitted with the application.

A4. Who is the contact on behalf of the sponsor for all correspondence relating to applications for this project? *This contact will receive copies of all correspondence from REC and HRA/R&D reviewers that is sent to the CI.*

	Title	Forename/Initials	Surname
	Ms	Claire	O'Donnell
Address	Lancaster University		
Post Code	LA1 4YT		
E-mail	sponsorship@lancaster.ac.uk		
Telephone	01524 592981		
Fax			

A5-1. Research reference numbers. *Please give any relevant references for your study:*

Applicant's/organisation's own reference number, e.g. R & D (if available):	N/A
Sponsor's/protocol number:	N/A
Protocol Version:	0.6
Protocol Date:	26/01/2022
Funder's reference number (enter the reference number or state not applicable):	N/A
Project website:	N/A

Additional reference number(s):

Ref.Number Description	Reference Number

Registration of research studies is encouraged wherever possible. You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you have registered your study please give details in the "Additional reference number(s)" section.

A5-2. Is this application linked to a previous study or another current application?

○ Yes ◉ No

Please give brief details and reference numbers.

2. OVERVIEW OF THE RESEARCH

To provide all the information required by review bodies and research information systems, we ask a number of specific questions. This section invites you to give an overview using language comprehensible to lay reviewers and members of the public. Please read the guidance notes for advice on this section.

A6-1. Summary of the study. *Please provide a brief summary of the research (maximum 300 words) using language easily understood by lay reviewers and members of the public. Where the research is reviewed by a REC within the UK Health Departments' Research Ethics Service, this summary will be published on the Health Research Authority (HRA) website following the ethical review. Please refer to the question specific guidance for this question.*

This study will focus on ambulance staff, who experience large amounts of stress at work which can negatively affect their wellbeing, but who are often missed out of research on other healthcare workers such as nurses and doctors. The study will focus on how kind people are to themselves, usually called 'self-compassion', and how able they are to understand and manage the emotions of themselves and others, which has been called 'emotional intelligence'. The study aims to find out whether the amount of self-compassion and emotional intelligence someone has affects their wellbeing, in terms of how much satisfaction they take from their caring role and how they view their own mental wellbeing.

Two ambulance Trusts in [redacted] will send invites to take part in the anonymous online survey to their staff members via email. Staff will be eligible to take part in the study if they currently work on emergency ambulances for the NHS as frontline staff with direct patient contact in their role. This includes paramedics, emergency care technicians and emergency care assistants.

The online survey can be accessed on a smartphone, tablet or PC. The survey will ask staff to fill in questionnaires about their demographic details and their level of self-compassion, emotional intelligence and wellbeing. This should take no longer than 20-30 minutes.

The results may help to inform ambulance services on how to appropriately support and train staff to manage their emotions and the emotions of patients and their families during very demanding situations, for example, attending road traffic collisions.

This research is being completed as part of a Doctorate in Clinical Psychology programme at Lancaster University.

A6-2. Summary of main issues. *Please summarise the main ethical, legal, or management issues arising from your study and say how you have addressed them.*

Not all studies raise significant issues. Some studies may have straightforward ethical or other issues that can be identified and managed routinely. Others may present significant issues requiring further consideration by a REC, HRA, or other review body (as appropriate to the issue). Studies that present a minimal risk to participants may raise complex organisational or legal issues. You should try to consider all the types of issues that the different reviewers may need to consider.

The research proposal was discussed with the research supervisor and stakeholders including research paramedics and ambulance staff in order to highlight the following issues and decide how best to mitigate them.

The researcher having access to identifiable information such as names and email addresses of potential participants would be a risk to their confidentiality. This will be mitigated by [redacted] and [redacted] sending the invite, adverts and link to the survey to their frontline staff members via their work email address, information already held by [redacted] and [redacted]. No-one outside [redacted] and [redacted] staff will be able to access this information, thus all information coming to the researcher will be anonymous. [redacted] and [redacted] will also not receive information about which staff members participate in the study, protecting the anonymity of participants. Where identifiable information is provided to the researcher (participants will be given the option of providing an email address if they would like to receive a summary of the results following completion of the study), these will be kept separately to the questionnaire responses on a password protected file on University approved secure cloud storage – only the researcher and supervisor will have access to these and they will be deleted as soon as the summary has been sent.

Consent will not be formally gathered and capacity will not be assessed as the study is an anonymous survey, which presents an issue with gaining informed consent to participate. However, as the survey is being sent to current frontline emergency ambulance staff, it is assumed they will have capacity as they would need capacity to work in their role. To ensure consent, potential participants will have a full participant information sheet so that they are fully informed about the study and they will be asked to confirm their consent at the end of this.

Participating in an online study may present a burden to potential participants, as stakeholders suggested ambulance staff have received several online surveys over the past year so may be experiencing 'survey fatigue'. To address this, shorter questionnaires have been chosen where appropriate in order to reduce time burden on participants. Further, participation is optional, with no rewards or monetary incentives, so that staff members can choose not to participate.

While it is expected that risk of distress will be low, it is possible that reflecting on their EI, self-compassion and wellbeing might lead some participants to feel distressed. As the data will be anonymous, it will not be possible to offer participants individual support. To address this, details of wellbeing support services will be included on the Participant Information Sheet at the start of the survey and in the Debrief information at the end. The contact details of the researcher and supervisor will be included in the participant information sheet should participants have any concerns regarding the study itself.

3. PURPOSE AND DESIGN OF THE RESEARCH

A7. Select the appropriate methodology description for this research. *Please tick all that apply*:

- ☐ Case series/ case note review
- ☐ Case control
- ☐ Cohort observation
- ☐ Controlled trial without randomisation
- ☑ Cross-sectional study
- ☐ Database analysis
- ☐ Epidemiology
- ☐ Feasibility/ pilot study
- ☐ Laboratory study
- ☐ Metanalysis
- ☐ Qualitative research
- ☑ Questionnaire, interview or observation study
- ☐ Randomised controlled trial
- ☐ Other (please specify)

A10. What is the principal research question/objective? *Please put this in language comprehensible to a lay person.*

What is the relationship between emotional intelligence, self-compassion and wellbeing in ambulance staff?

A11. What are the secondary research questions/objectives if applicable? *Please put this in language comprehensible to a lay person.* N/A

A12. What is the scientific justification for the research? *Please put this in language comprehensible to a lay person.*

Having higher levels of emotional intelligence (EI) and self-compassion may help to protect healthcare workers' wellbeing, having been related to lower levels of negative wellbeing outcomes such as burnout and mental health symptoms (e.g. Buceta et al., 2019; Duarte & Pinto-Gouveia, 2017; Zeidner et al., 2013) and higher levels of positive outcomes such as job satisfaction (e.g. Gong et al., 2020) and satisfaction with their caring role (Buceta et al., 2019). This research has, however, not included ambulance staff. This is despite this professional group regularly being exposed to significant workplace stressors such as traumatic incidents (Granter et al., 2019) which increases their risk of negative wellbeing outcomes, such as Post-Traumatic Stress Disorder (PTSD), depression, anxiety (Lawn et al., 2020) and suicide (ONS, 2017). This indicates that there is a need for research into individual factors which may promote wellbeing in ambulance staff, particularly as one study with paramedics found higher levels of selfcompassion to be related to lower levels of psychological wellbeing (Mitmansgruber et al., 2008). This suggests that individual factors may play a different role in wellbeing for ambulance staff than they do in other groups of healthcare workers. Therefore, it is important to explore the impact of EI and self-compassion on wellbeing in ambulance staff, in order to gain a greater understanding of the individual factors that contribute to their wellbeing.

Insights from this research may lead to the development of training and interventions for ambulance staff which could prevent deterioration in wellbeing or support those who are at risk of poorer wellbeing outcomes. For example, EI and self-compassion training could be included in the curriculum for ambulance staff, or interventions based on EI and self-compassion could be tailored to the specific stressors of emergency care work in order to improve staff wellbeing.

A13. Please summarise your design and methodology. *It should be clear exactly what will happen to the research participant, how many times and in what order. Please complete this section in language comprehensible to the lay person. Do not simply reproduce or refer to the protocol. Further guidance is available in the guidance notes.*

Study design, methodology and location

This quantitative study will use a within-participants, cross-sectional design to explore the relationship between EI, self-compassion and wellbeing in emergency ambulance staff. Data will be collected via online questionnaires. This design was chosen as much of the research into EI and self-compassion in the wellbeing of healthcare workers uses a similar design, allowing for comparisons between the findings of this study and prior research.

The survey will take place online with staff in [redacted] and [redacted]. This was chosen to maximise the number of participants able to participate. Discussion with the research supervisor and research leads at [redacted] and [redacted] suggested that online surveys would be more robust to possible changes due to Covid-19 (lockdowns and self-isolation) and that ambulance staff would be more likely to participate in an online survey than a lengthier face to face interview. Collecting data online and anonymously will reduce the possibility of the researcher influencing participants' responses or of participants responding in a socially desirable manner, thus reducing researcher bias.

Sample

The target sample size is 68-119 participants. [redacted] and [redacted] will send the study invitation to all frontline staff via their work email address. Research leads at [redacted] and [redacted] indicated that typical participation in online surveys was around 70-100 staff members in each service, which should be sufficient for the proposed analysis. The survey will also be distributed by [redacted] and the [redacted] to their members if the required sample size is not met.

Procedure for participants

Potential participants will receive an email from their employing Trust inviting them to participate in one online survey. The email will include brief details about the study, a poster advert and a link to the online survey. The researcher's contact details will also be available should potential participants wish to ask any questions. Staff members will then decide if they want to participate. Those who choose to participate will be able to access the link on a smartphone, tablet or computer.

Participants will follow the link to the online survey. They will first see the Participant Information Sheet which will provide further details about the study and how their data will be used. At the end of this will be a short consent form, which ends with the following sentence: "By continuing with the survey, you agree that you understand the points outlined in the participant information sheet version… and the above consent form, and consent to taking part in the current study."

Those who consent to participate will then be presented with the questionnaires in the following order: demographic questionnaire, Self-Report Emotional Intelligence Test (Schutte et al., 1998), Self-Compassion Scale (Neff, 2003b), Professional Quality of Life Scale (Heritage et al., 2018), and Warwick-Edinburgh Mental Wellbeing Scale (Tennant et al., 2007). There will be checkboxes for them to tick their response to each item. Missed questions will be highlighted and participants will be asked to return to complete the question to reduce missing data points.
After completing the questionnaires, the Debrief Sheet will be presented which will thank them for their time and provide information about wellbeing services should they require support. On the final page, participants will have the option of providing their email address in order to receive an email summary of the results following completion of the study and submission of the thesis in March 2023. They will not receive feedback on their individual scores. The whole procedure should take no longer than 20-30 minutes.

The proposed procedure has been discussed with research leads at [redacted] and [redacted] and two members of ambulance staff. Each person consulted felt that the procedure was straightforward and that ambulance staff would understand and accept it.

A14-1. In which aspects of the research process have you actively involved, or will you involve, patients, service users, and/or their carers, or members of the public?

- [x] Design of the research
- [ ] Management of the research
- [x] Undertaking the research
- [ ] Analysis of results
- [x] Dissemination of findings
- [ ] None of the above

Give details of involvement, or if none please justify the absence of involvement.
Design: I consulted two research paramedics regarding the study design. They were able to advise, having experience as members of the intended participant group and of conducting research with this group. They reported that they viewed the research topic as relevant to the profession and that ambulance staff are likely to find the procedures acceptable and straightforward. They also advised on methods of data collection and recruitment, which informed the proposed recruitment strategy.

I liaised with two NHS ambulance staff members (one paramedic and one emergency care assistant) on the participant-facing information, including the wording of the participant information and debrief sheets, poster advert, email invite and the clarity of questionnaires.

Undertaking: Research leads at two ambulance Trusts will support with recruitment of participants. They will disseminate the advertising material and invites to their staff and will advise on the most appropriate timing of distribution of the surveys in order to avoid sending them at times when other Trust questionnaires are being sent, therefore reducing 'survey fatigue' for staff.

Dissemination: I plan to liaise with ambulance staff in order to produce the summary of results which will be sent to participants who express an interest in receiving this.

4. RISKS AND ETHICAL ISSUES

RESEARCH PARTICIPANTS

A15. What is the sample group or cohort to be studied in this research?

Select all that apply:

- [ ] Blood
- [ ] Cancer
- [ ] Cardiovascular
- [ ] Congenital Disorders
- [ ] Dementias and Neurodegenerative Diseases
- [ ] Diabetes
- [ ] Ear
- [ ] Eye
- [x] Generic Health Relevance

- ☐ Infection
- ☐ Inflammatory and Immune System
- ☐ Injuries and Accidents
- ☑ Mental Health
- ☐ Metabolic and Endocrine
- ☐ Musculoskeletal
- ☐ Neurological
- ☐ Oral and Gastrointestinal
- ☐ Paediatrics
- ☐ Renal and Urogenital
- ☐ Reproductive Health and Childbirth
- ☐ Respiratory
- ☐ Skin
- ☐ Stroke

Gender: Male and female participants

Lower age limit: 18 Years

Upper age limit: No upper age limit

A17-1. Please list the principal inclusion criteria (list the most important, max 5000 characters).

Staff who currently work on emergency ambulances for the NHS, in any role. Only frontline staff who have direct face-toface patient contact in their role will be included. As participants will be staff members, only adults aged 18 and above will be eligible.

A17-2. Please list the principal exclusion criteria (list the most important, max 5000 characters).

Only current staff will be eligible to participate, therefore only adults aged 18 and above will be included. Individuals who are not current members of staff who work on NHS emergency ambulances, and individuals who do not have face-to-face patient contact in their role, will not be eligible.

The survey information and questionnaires will be in the English language, due to time and funding restrictions on translation of study materials. Therefore, only people who are able to read English will be able to participate. As working for the ambulance service in patient-facing roles requires a minimum standard of English proficiency, this is not expected to unnecessarily exclude potential participants.

RESEARCH PROCEDURES, RISKS AND BENEFITS

A18. Give details of all non-clinical intervention(s) or procedure(s) that will be received by participants as part of the research protocol. *These include seeking consent, interviews, non-clinical observations and use of questionnaires.*

Please complete the columns for each intervention/procedure as follows:

1. Total number of interventions/procedures to be received by each participant as part of the research protocol.
2. If this intervention/procedure would be routinely given to participants as part of their care outside the research,how many of the total would be routine?
3. Average time taken per intervention/procedure (minutes, hours or days)
4. Details of who will conduct the intervention/procedure, and where it will take place.

Intervention or procedure	1	2	3	4
Potential participants will receive an invitation to participate via email from their employer.	1	0	5 minutes	Information about the study and a link to the online survey will be sent on behalf of the researcher by the organisations that have agreed to assist with recruitment.
Online survey - includes information sheet and questionnaires on demographic details, emotional intelligence, self-compassion, professional wellbeing, mental wellbeing.	1	0	20-30 minutes	The survey will be completed online by participants. It can be accessed via smartphone, tablet or computer, so participants can choose where to complete the survey.

A21. How long do you expect each participant to be in the study in total?

20-30 minutes

A22. What are the potential risks and burdens for research participants and how will you minimise them?

For all studies, describe any potential adverse effects, pain, discomfort, distress, intrusion, inconvenience or changes to lifestyle. Only describe risks or burdens that could occur as a result of participation in the research. Say what steps would be taken to minimise risks and burdens as far as possible.

Distress:
It is not anticipated that taking part in this study will cause distress. Research leads at [redacted] and [redacted] and two members of ambulance staff felt that the study is likely to be acceptable to potential participants. While the expected risk of distress is low, it is possible that reflecting on emotional intelligence, self-compassion and wellbeing might cause distress. To address this, details of possible sources of support (wellbeing support services and helplines) are included in both the Participant Information Sheet and Debrief Sheet.

Time burden:
The [redacted] research lead highlighted that ambulance staff have received several online surveys over the past year so may experience 'survey fatigue', especially due to the time pressure of their jobs during the pandemic. To address this, shorter questionnaires have been chosen over lengthier questionnaires where appropriate and a date for sending surveys out will be agreed with both Trusts in order to avoid conflicting with any Trust surveys. Further, potential participants will not be offered monetary incentives or rewards for participation in order to ensure participants do not feel pressured so that participation is optional.

Confidentiality:
Personal-identifiable information will not be collected and the Trusts which will distribute the survey will not receive information about which staff members choose to participate. Thus, participation will be confidential. Anonymised questionnaire data will be stored electronically in a password protected file space on the University server.
Participants will have the option of providing their email address to receive an email summary of the results following completion of the study. Where email address are provided, they will be kept in a password-protected file on the University server which is separate to the questionnaire responses, and these will be deleted following the summary being sent out.

A23. Will interviews/ questionnaires or group discussions include topics that might be sensitive, embarrassing or upsetting, or is it possible that criminal or other disclosures requiring action could occur during the study?

◉ Yes ○ No

If Yes, please give details of procedures in place to deal with these issues:

There is the potential that reflecting on emotional intelligence, self-compassion and wellbeing may lead to some discomfort. To address this, possible sources of support from wellbeing support services will be included in the participant information sheet and again in a debriefing sheet at the end of the questionnaire.

As the surveys will be anonymous, there will be no opportunity for unexpected disclosure of information by participants that could require follow-up action by the researcher. Further, confidentiality will not be broken as no data will be collected regarding risk of harm to self or others and no qualitative data will be collected.

A24. What is the potential for benefit to research participants?

There are no direct benefits to participants expected from this study.

Participants may find reflecting on their emotional intelligence, self-compassion and wellbeing a positive experience. At a wider level, insights from this research could lead to changes to training and interventions for ambulance staff, for example by helping to inform ambulance services on how to appropriately support staff to manage their emotions and the emotions of patients and their families during very demanding situations.

A26. What are the potential risks for the researchers themselves? *(if any)*

There are no anticipated risks for the researchers in this study.
University email addresses will be used on recruitment information and participant information sheets in order to protect the researchers' personal details.

RECRUITMENT AND INFORMED CONSENT

In this section we ask you to describe the recruitment procedures for the study. Please give separate details for different study groups where appropriate.

A27-1. How will potential participants, records or samples be identified? Who will carry this out and what resources will be used?*For example, identification may involve a disease register, computerised search of GP records, or review of medical records. Indicate whether this will be done by the direct healthcare team or by researchers acting under arrangements with the responsible care organisation(s).*

Potential participants can be any member of frontline NHS ambulance staff. [redacted] and [redacted] already hold information on the work email addresses of their staff members, therefore will send the advertising materials and survey link to their frontline staff on behalf of the researchers. Individual staff members will then choose whether or not they wish to participate by following the link and completing the survey, which will be accessible on either smartphone, tablet or computer.

A27-2. Will the identification of potential participants involve reviewing or screening the identifiable personal information of patients, service users or any other person?

○ Yes ◉ No

Please give details below:
The ambulance services already hold the details and email addresses of their staff members.
As participants will be any frontline member of emergency ambulance staff, all eligible staff will be sent a link to the survey and therefore their identifiable personal information will not need to be screened to identify them.

A28. Will any participants be recruited by publicity through posters, leaflets, adverts or websites?

◉ Yes ○ No

If Yes, please give details of how and where publicity will be conducted, and enclose copy of all advertising material (with version numbers and dates).

Potential participants will be invited to participate via email through their Trust email. A poster advert will be included to give brief information about the study.

A29. How and by whom will potential participants first be approached?

Participants will be sent an email to their work email address by their employing Trust. The email will include brief details on the study, a poster advert and the link to the online survey.
This will help to protect the confidentiality of participants as the employer can send the email to all frontline staff at once, avoiding identification of individual staff members, and means that the researcher does not need to have the personal details of potential participants.
The participant information sheet will inform participants that they can withdraw during the completion of the survey and that participation is voluntary though they will not be able to withdraw their data after their responses have been submitted as the survey will be anonymous. Once the email inviting staff to participate has been sent, staff members can choose whether or not to participate and no information will be collected on which staff members choose to participate or decline. Potential participants will be given the researcher's contact details prior to taking part, should they have any questions.

A30-1. Will you obtain informed consent from or on behalf of research participants?

○ Yes ◉ No

If you will be obtaining consent from adult participants, please give details of who will take consent and how it will be done, with details of any steps to provide information (a written information sheet, videos, or interactive material). Arrangements for adults unable to consent for themselves should be described separately in Part B Section 6, and for children in Part B Section 7.

If you plan to seek informed consent from vulnerable groups, say how you will ensure that consent is voluntary and fully informed.

If you are not obtaining consent, please explain why not.

Formal consent will not be collected as the data will be anonymous, therefore not classed as personal data, and collecting written consent would conflict with the anonymity of participation.

However, the participant information sheet will give information on the study and how their data will be used. At the end of the participant information sheet, prior to the start of the survey, there will be a short consent form which will conclude with the following sentence: “By continuing with the survey, you agree that you understand the points outlined in the participant information sheet version… and the above consent form, and consent to taking part in the current study.” Thus, continuing to the survey will be taken as participants’ consent.

Please enclose a copy of the information sheet(s) and consent form(s).

CONFIDENTIALITY

In this section, personal data means any data relating to a participant who could potentially be identified. It includes

pseudonymised data capable of being linked to a participant through a unique code number.

Storage and use of personal data during the study

A36. Will you be undertaking any of the following activities at any stage (including in the identification of potential participants)?*(Tick as appropriate)*

- ☐ Access to medical records by those outside the direct healthcare team
- ☐ Access to social care records by those outside the direct social care team
- ☑ Electronic transfer by magnetic or optical media, email or computer networks
- ☐ Sharing of personal data with other organisations
- ☐ Export of personal data outside the EEA
- ☐ Use of personal addresses, postcodes, faxes, emails or telephone numbers
- ☐ Publication of direct quotations from respondents
- ☐ Publication of data that might allow identification of individuals
- ☐ Use of audio/visual recording devices
- ☐ Storage of personal data on any of the following:
  - ☐ Manual files (includes paper or film)
  - ☐ NHS computers
  - ☐ Social Care Service computers
  - ☐ Home or other personal computers
  - ☑ University computers
  - ☐ Private company computers
  - ☐ Laptop computers

Further details:
Electronic transfer:
Once the study has been completed, the completed questionnaire data will be retained for storage on University approved secure cloud storage by the DClinPsy admin team. In order to transfer data for long-term storage, data will be encrypted and transferred electronically to the Research Coordinator using a secure method which is supported by the University. The data will be retained for 10 years, then deleted by the team.

Storage on University computers:
Completed questionnaires will be stored electronically in a password protected file space on University approved secure cloud storage. Only the researchers involved in this project will have access to this data.
There will be an option for participants to provide an email address should they wish to receive a summary of the findings at the end of the study. These contact details will be stored in a password protected file space on University approved secure cloud storage, separate from the questionnaire responses, and will be deleted once the summary has been sent out. Only the researcher and supervisor involved in this project will have access to this data.

A37. Please describe the physical security arrangements for storage of personal data during the study?

No data will be stored physically.

Study data will be stored electronically in password protected file space on University approved secure cloud storage and anonymised. Participant email addresses will be stored in a separate password protected file on University approved secure cloud storage. Therefore no personal data will be stored on individual computers or laptops. Only the researchers involved in this project will have access to this data.

A38. How will you ensure the confidentiality of personal data?*Please provide a general statement of the policy and procedures for ensuring confidentiality, e.g. anonymisation or pseudonymisation of data.*

Personal data will not be collected. Questionnaire data will be anonymised with an arbitrary participant number, unrelated to any personal or identifiable information. This will be completed automatically using the computer software, therefore removing any researcher activity during this process.

Where participants provide an email address in order to receive a summary of the study results, these will be stored electronically in a password protected file on University approved secure cloud storage, separately from the questionnaire data. Email addresses will be deleted as soon as the summary has been sent out. Email addresses will be separated as soon as possible when they are provided to reduce the amount of time the contact details are connected the participants' responses.

A40. Who will have access to participants' personal data during the study? *Where access is by individuals outside the direct care team, please justify and say whether consent will be sought.*

No personal data will be collected during the survey. Only the researcher and research supervisor will have access to participants' data during the study. The DClinPsy admin team will have access to the anonymised questionnaire once it has been transferred to them. This will be outlined in the participant information sheet.

Storage and use of data after the end of the study

A41. Where will the data generated by the study be analysed and by whom?

Only anonymised data will be used in the analysis, therefore no personal data will be transferred for analysis. The data will be analysed by the researcher, with the research supervisor also having access to the data. Analyses will take place in private settings (researcher's home).

A42. Who will have control of and act as the custodian for the data generated by the study?

Title	Forename/Initials	Surname
Professor	Bill	Sellwood

Post	Professor of Clinical Psychology
Qualifications	PhD
Work Address	Health Innovation One Sir John Fisher Drive Lancaster
Post Code	LA1 4AT
Work Email	b.sellwood@lancaster.ac.uk
Work Telephone	01524592691
Fax	

A43. How long will personal data be stored or accessed after the study has ended?

- (●) Less than 3 months
- ( ) 3 – 6 months
- ( ) 6 – 12 months
- ( ) 12 months – 3 years
- ( ) Over 3 years

A44. For how long will you store research data generated by the study?

Years: 10
Months: 0

A45. Please give details of the long term arrangements for storage of research data after the study has ended. *Say where data will be stored, who will have access and the arrangements to ensure security.*

The completed questionnaire data will be retained for storage by the Lancaster University DClinPsy admin team. In order to transfer data for long-term storage, data will be encrypted and transferred electronically to the Research Coordinator using a secure method which is supported by the University. The data will be retained for 10 years, as per Lancaster University policy, then deleted by the admin team. Archived data will be stored on University approved secure cloud storage.

INCENTIVES AND PAYMENTS

A46. Will research participants receive any payments, reimbursement of expenses or any other benefits or incentives for taking part in this research?

○ Yes ◉ No

A47. Will individual researchers receive any personal payment over and above normal salary, or any other benefits or incentives, for taking part in this research?

○ Yes ◉ No

A48. Does the Chief Investigator or any other investigator/collaborator have any direct personal involvement (e.g. financial, share holding, personal relationship etc.) in the organisations sponsoring or funding the research that may give rise to a possible conflict of interest?

○ Yes ◉ No

NOTIFICATION OF OTHER PROFESSIONALS

A49-1. Will you inform the participants' General Practitioners (and/or any other health or care professional responsible for their care) that they are taking part in the study?

○ Yes ◉ No

If Yes, please enclose a copy of the information sheet/letter for the GP/health professional with a version number and date.

PUBLICATION AND DISSEMINATION

A50. Will the research be registered on a public database?

○ Yes ◉ No

Please give details, or justify if not registering the research. No suitable register exists.

Registration of research studies is encouraged wherever possible.
You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you are aware of a suitable register or other method of publication, please give details. If not, you may indicate that no suitable register exists. Please ensure that you have entered registry reference number(s) in question A5-1.

A51. How do you intend to report and disseminate the results of the study? *Tick as appropriate:*

- ☑ Peer reviewed scientific journals
- ☑ Internal report
- ☑ Conference presentation
- ☐ Publication on website
- ☐ Other publication
- ☐ Submission to regulatory authorities
- ☐ Access to raw data and right to publish freely by all investigators in study or by Independent Steering Committeeon behalf of all investigators
- ☐ No plans to report or disseminate the results
- ☑ Other (please specify)

A summary of results will be sent via email to participants who indicate they would like to receive this. Two members of ambulance staff will be liaised with in order to produce a lay summary of results.

A52. If you will be using identifiable personal data, how will you ensure that anonymity will be maintained when publishing the results?

Identifiable personal data will not be used in this study.

Email addresses provided by participants will only be used to send participants a summary of the results.

A53. How and when will you inform participants of the study results?

If there will be no arrangements in place to inform participants please justify this.
Participants will be sent an email summary of the results following the completion of the study and submission of the thesis in March 2023.

5. Scientific and Statistical Review

A54. How has the scientific quality of the research been assessed? *Tick as appropriate:*

- ☐ Independent external review
- ☐ Review within a company
- ☐ Review within a multi−centre research group
- ☑ Review within the Chief Investigator's institution or host organisation
- ☐ Review within the research team
- ☑ Review by educational supervisor
- ☐ Other

Justify and describe the review process and outcome. If the review has been undertaken but not seen by the researcher, give details of the body which has undertaken the review:
The proposal was developed with the support of the research supervisor. The proposal has been reviewed anonymously and approved by academic and clinical staff on the DClinPsy research team.

For all studies except non-doctoral student research, please enclose a copy of any available scientific critique reports, together with any related correspondence.

For non-doctoral student research, please enclose a copy of the assessment from your educational supervisor/ institution.

A56. How have the statistical aspects of the research been reviewed? *Tick as appropriate:*

- ☐ Review by independent statistician commissioned by funder or sponsor
- ☐ Other review by independent statistician
- ☐ Review by company statistician
- ☐ Review by a statistician within the Chief Investigator's institution
- ☐ Review by a statistician within the research team or multi−centre group
- ☑ Review by educational supervisor
- ☐ Other review by individual with relevant statistical expertise
- ☐ No review necessary as only frequencies and associations will be assessed – details of statistical input notrequired

In all cases please give details below of the individual responsible for reviewing the statistical aspects. If advice has been provided in confidence, give details of the department and institution concerned.

	Title Forename/Initials Surname
	Dr Ian Fletcher
Department	Faculty of Health and Medicine, Division of Health Research
Institution	Lancaster University
Work Address	Health Innovation One Sir John Fisher Drive Lancaster
Post Code	LA1 4AT
Telephone	01524592691
Fax	
Mobile	
E-mail	i.j.fletcher@lancs.ac.uk

Please enclose a copy of any available comments or reports from a statistician.

A57. What is the primary outcome measure for the study?

The primary outcome measure will be participants' self-reported wellbeing. This will be their score on questionnaires of professional and psychological wellbeing.

A58. What are the secondary outcome measures? *(if any)*

N/A

A59. What is the sample size for the research? *How many participants/samples/data records do you plan to study in total? If there is more than one group, please give further details below.*

Total UK sample size: 119

Total international sample size (including UK): 119

Total in European Economic Area:

Further details:

A60. How was the sample size decided upon? *If a formal sample size calculation was used, indicate how this was done, giving sufficient information to justify and reproduce the calculation.*

The suggested sample size for a hierarchical multiple regression model with two to ten predictor variables, a medium effect size (0.15), power of 0.8 and alpha level of p=.05, is 68-119 participants (Field, 2018). The two predictor variables will be emotional intelligence and self-compassion. If participant numbers are sufficient, the four emotional intelligence subscales and six self-compassion subscales will be explored separately, to form ten predictor variables.

A medium effect size was chosen as medium effect sizes have been found in research which explored the relationship between wellbeing and EI (de Looff et al., 2019; Gong et al., 2020) or wellbeing and self-compassion (Buceta et al., 2019; Dev et al., 2020) in other groups of healthcare workers.

The two ambulance Trusts who agreed to distribute the survey to their staff indicated that a typical response rate to research surveys is around 70-100 staff members in each service. This should allow the target sample size to be reached, without unnecessarily burdening staff. If the sample size is not reached, [redacted] and [redacted] will also distribute the survey to their members.

A61. Will participants be allocated to groups at random?

○ Yes ◉ No

A62. Please describe the methods of analysis (statistical or other appropriate methods, e.g. for qualitative research) by which the data will be evaluated to meet the study objectives.

Quantitative data will be collected via an online questionnaire hosted on the Qualtrics website. The questionnaire scores will be entered into SPSS by the researcher. The data will first be checked for outliers and normality of distribution in order to allow for parametric tests of correlation. If data are normal, Pearson's correlations will be calculated between each predictor and outcome variable. Data on participants' demographic details and correlations between variables will be presented in two separate tables.

Hierarchical multiple regression will be conducted to explore the relationships between predictor variables and outcome variables. Following previous research, demographic variables will be entered in the first block. As prior research suggests a stronger role for emotional intelligence than self-compassion in the wellbeing of ambulance staff, emotional intelligence will be entered in the next block, with self-compassion components being entered last. EI and self-compassion subscales will be entered separately in each block if a sufficient sample size is reached, in order to explore the predictive value of subcomponents of EI and self-compassion.

During the survey, any missed questions will be highlighted and participants will be asked to return to complete the question to reduce missing data points.

6. MANAGEMENT OF THE RESEARCH

A63. Other key investigators/collaborators. *Please include all grant co−applicants, protocol co−authors and other key members of the Chief Investigator's team, including non-doctoral student researchers.*

Title Forename/Initials Surname

Post
Qualifications
Employer
Work Address

Post Code
Telephone
Fax
Mobile
Work Email

A64-1. Sponsor

Town/city Lancaster

Lead Sponsor

Status: NHS or HSC care organisation

Academic

Pharmaceutical industry

Medical device industry

Local Authority

Other social care provider (including voluntary sector or private organisation)

Other

Commercial status: Non-Commercial

If Other, please specify:

Contact person

Name of organisation Lancaster University

Given name Claire

Family name O'Donnell

Address Lancaster University

Post code	LA1 4YT
Country	United Kingdom
Telephone	01524 592981
Fax	
E-mail	sponsorship@lancaster.ac.uk

Legal representative for clinical investigation of medical device (studies involving Northern Ireland only)
Clinical Investigations of Medical Devices that take place in Northern Ireland must have a legal representative of the sponsor that is based in Northern Ireland or the EU

Contact person

Name of organisation	
Given name	
Family name	
Address	
Town/city	
Post code	
Country	
Telephone	
Fax	
E-mail	

A65. Has external funding for the research been secured?

Please tick at least one check box.

☐ Funding secured from one or more funders

☐ External funding application to one or more funders in progress ☑ No application for external funding will be made

What type of research project is this?

○ Standalone project
○ Project that is part of a programme grant
○ Project that is part of a Centre grant
○ Project that is part of a fellowship/ personal award/ research training award ◉ Other

Other – please state:
Project that is part of a Doctorate programme

A66. Has responsibility for any specific research activities or procedures been delegated to a subcontractor (other than a co-sponsor listed in A64-1) ? *Please give details of subcontractors if applicable.* ○ Yes ◉ No

A67. Has this or a similar application been previously rejected by a Research Ethics Committee in the UK or another country?

○ Yes ◉ No

Please provide a copy of the unfavourable opinion letter(s). You should explain in your answer to question A6-2 how the reasons for the unfavourable opinion have been addressed in this application.

A68-1. Give details of the lead NHS R&D contact for this research:

Title Forename/Initials Surname

[redacted]

Details can be obtained from the NHS R&D Forum website: http://www.rdforum.nhs.uk

A69-1. How long do you expect the study to last in the UK?

Planned start date: 03/01/2022 Planned end date: 31/01/2023 Total duration:

Years: 1 Months: 0 Days: 29

A71-1. Is this study?

○ Single centre

◉ Multicentre

A71-2. Where will the research take place? *(Tick as appropriate)*

☑ England
☐ Scotland
☐ Wales
☐ Northern Ireland
☐ Other countries in European Economic Area

Total UK sites in study 3

Does this trial involve countries outside the EU?

○ Yes ◉ No

A72. Which organisations in the UK will host the research?*Please indicate the type of organisation by ticking the box and give approximate numbers if known:*

☑ NHS organisations in England	2
☐ NHS organisations in Wales	
☐ NHS organisations in Scotland	
☐ HSC organisations in Northern Ireland	
☐ GP practices in England	
☐ GP practices in Wales	
☐ GP practices in Scotland	
☐ GP practices in Northern Ireland	
☐ Joint health and social care agencies (eg community mental health teams)	
☐ Local authorities	
☐ Phase 1 trial units	
☐ Prison establishments	
☐ Probation areas	
☐ Independent (private or voluntary sector) organisations	
☑ Educational establishments	1
☐ Independent research units	
☐ Other (give details)	

Total UK sites in study: 3

A73-1. Will potential participants be identified through any organisations other than the research sites listed above?

○ Yes ◉ No

A74. What arrangements are in place for monitoring and auditing the conduct of the research?

The researcher will discuss the process of the research with their supervisor. The research supervisor will have access to the raw data and will support the analysis process to ensure this is completed to a good standard. Supervision will be offered by the research supervisor on a monthly basis, with draft reads being completed by the research team during the write-up of the paper.

A76. Insurance/ indemnity to meet potential legal liabilities

***Note:* in this question to NHS indemnity schemes include equivalent schemes provided by Health and Social Care (HSC) in Northern Ireland**

A76-1. What arrangements will be made for insurance and/or indemnity to meet the potential legal liability of the sponsor(s) for harm to participants arising from the management of the research? *Please tick box(es) as applicable.*

Note: Where a NHS organisation has agreed to act as sponsor or co-sponsor, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For all other sponsors, please describe the arrangements and provide evidence.

☐ NHS indemnity scheme will apply (NHS sponsors only)

☑ Other insurance or indemnity arrangements will apply (give details below)

Lancaster University legal liability cover will apply.

Please enclose a copy of relevant documents.

A76-2. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of the sponsor(s) or employer(s) for harm to participants arising from the design of the research? *Please tick box(es) as applicable.*

Note: Where researchers with substantive NHS employment contracts have designed the research, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For other protocol authors (e.g. company employees, university members), please describe the arrangements and provide evidence.

☐ NHS indemnity scheme will apply (protocol authors with NHS contracts only) ☑

Other insurance or indemnity arrangements will apply (give details below)

Lancaster University legal liability cover will apply.

Please enclose a copy of relevant documents.

A76-3. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of investigators/collaborators arising from harm to participants in the conduct of the research?

Note: Where the participants are NHS patients, indemnity is provided through the NHS schemes or through professional indemnity. Indicate if this applies to the whole study (there is no need to provide documentary evidence). Where non-NHS sites are to be included in the research, including private practices, please describe the arrangements which will be made at these sites and provide evidence.

☐ NHS indemnity scheme or professional indemnity will apply (participants recruited at NHS sites only)
☐ Research includes non-NHS sites (give details of insurance/ indemnity arrangements for these sites below)

Lancaster University legal liability cover will apply.

Please enclose a copy of relevant documents.

A78. Could the research lead to the development of a new product/process or the generation of intellectual property?

○ Yes ◉ No ○ Not sure

PART C: Overview of research sites

Please enter details of the host organisations (Local Authority, NHS or other) in the UK that will be responsible for the research sites. *For further information please refer to guidance.*

Investigator identifier	Research site	Investigator Name
IN1	◉ NHS/HSC Site ○ Non-NHS/HS : Site Organisation name [redacted] Address [redacted] Post Code [redacted] Country [redacted]	Forename Middle name [redacted] Family name Email [redacted] Qualification (MD...) [redacted] Country [redacted]
IN2	◉ NHS/HSC Site ○ Non-NHS/HS Organisation name : Site Address [redacted] Post Code [redacted] Country [redacted]	Forename Middle name [redacted] Family name Email [redacted] Qualification (MD...) [redacted] Country [redacted]

IN3

○ NHS/HSC Site
◉ Non-NHS/HSC Site

Institution name	Lancaster University
Department name	FHM
Street address	Health Innovation One
Town/city	Sir John Fisher Drive
Post Code	LA1 4AT
Country	United Kingdom

Forename	Bill
Middle name	
Family name	Sellwood
Email	b.sellwood@lancaster.ac.uk
Qualification (MD...)	PhD
Country	United Kingdom

PART D: Declarations

D1. Declaration by Chief Investigator

1. The information in this form is accurate to the best of my knowledge and belief and I take full responsibility for it.
2. I undertake to fulfil the responsibilities of the chief investigator for this study as set out in the UK Policy Framework for Health and Social Care Research.
3. I undertake to abide by the ethical principles underlying the Declaration of Helsinki and good practice guidelines on the proper conduct of research.
4. If the research is approved I undertake to adhere to the study protocol, the terms of the full application as approved and any conditions set out by review bodies in giving approval.
5. I undertake to notify review bodies of substantial amendments to the protocol or the terms of the approved application, and to seek a favourable opinion from the main REC before implementing the amendment.
6. I undertake to submit annual progress reports setting out the progress of the research, as required by review bodies.
7. I am aware of my responsibility to be up to date and comply with the requirements of the law and relevant guidelines relating to security and confidentiality of patient or other personal data, including the need to register when necessary with the appropriate Data Protection Officer. I understand that I am not permitted to disclose identifiable data to third parties unless the disclosure has the consent of the data subject or, in the case of patient data in England and Wales, the disclosure is covered by the terms of an approval under Section 251 of the NHS Act 2006.
8. I understand that research records/data may be subject to inspection by review bodies for audit purposes if required.
9. I understand that any personal data in this application will be held by review bodies and their operational managers and that this will be managed according to the principles established in the Data Protection Act 2018.
10. I understand that the information contained in this application, any supporting documentation and all correspondence with review bodies or their operational managers relating to the application:

    - Will be held by the REC (where applicable) until at least 3 years after the end of the study; and by NHS R&D offices (where the research requires NHS management permission) in accordance with the NHS Code of Practice on Records Management.
    - May be disclosed to the operational managers of review bodies, or the appointing authority for the REC (where applicable), in order to check that the application has been processed correctly or to investigate any complaint.
    - May be seen by auditors appointed to undertake accreditation of RECs (where applicable).
    - Will be subject to the provisions of the Freedom of Information Acts and may be disclosed in response to requests made under the Acts except where statutory exemptions apply. ◦ May be sent by email to REC members.

11. I understand that information relating to this research, including the contact details on this application, may be held on national research information systems, and that this will be managed according to the principles established in the Data Protection Act 2018.
12. Where the research is reviewed by a REC within the UK Health Departments Research Ethics Service, I understand that the summary of this study will be published on the website of the Health Research Authority (HRA) together with the contact point for enquiries named below. Publication will take place no earlier than 3 months after the issue of the ethics committee's final opinion or the withdrawal of the application.

Contact point for publication*(Not applicable for R&D Forms)*

HRA would like to include a contact point with the published summary of the study for those wishing to seek further

information. We would be grateful if you would indicate one of the contact points below.

Chief Investigator

- ○ Sponsor
- ○ Study co-ordinator
- ◉ Student
- ○ Other – please give details

None

Access to application for training purposes *(Not applicable for R&D Forms) Optional – please tick as appropriate:*

☑ I would be content for members of other RECs to have access to the information in the application in confidence for training purposes. All personal identifiers and references to sponsors, funders and research units would be removed.

This section was signed electronically by Prof William Sellwood on 01/02/2022 17:02.

Job Title/Post:	Professor of Clinical Psychology
Organisation:	Lancaster University
Email:	b.sellwood@lancaster.ac.uk

D2. Declaration by the sponsor's representative

If there is more than one sponsor, this declaration should be signed on behalf of the co−sponsors by a representative of the lead sponsor named at A64-1.

I confirm that:

1. This research proposal has been discussed with the Chief Investigator and agreement in principle to sponsor the research is in place.

2. An appropriate process of scientific critique has demonstrated that this research proposal is worthwhile and of high scientific quality.

3. Any necessary indemnity or insurance arrangements, as described in question A76, will be in place before this research starts. Insurance or indemnity policies will be renewed for the duration of the study where necessary.

4. Arrangements will be in place before the study starts for the research team to access resources and support to deliver the research as proposed.

5. Arrangements to allocate responsibilities for the management, monitoring and reporting of the research will be in place before the research starts.

6. The responsibilities of sponsors set out in the UK Policy Framework for Health and Social Care Research will be fulfilled in relation to this research.

   Please note: *The declarations below do not form part of the application for approval above. They will not be considered by the Research Ethics Committee.*

7. Where the research is reviewed by a REC within the UK Health Departments Research Ethics Service, I understand that the summary of this study will be published on the website of the National Research Ethics Service (NRES), together with the contact point for enquiries named in this application. Publication will take place no earlier than 3 months after issue of the ethics committee's final opinion or the withdrawal of the application.

8. Specifically, for submissions to the Research Ethics Committees (RECs) I declare that any and all clinical trials approved by the HRA since 30th September 2013 (as defined on IRAS categories as clinical trials of medicines, devices, combination of medicines and devices or other clinical trials) have been registered on a publically accessible register in compliance with the HRA registration requirements for the UK, or that any deferral granted by the HRA still applies.

This section was signed electronically by An authorised approver at sponsorship@lancaster.ac.uk on 02/02/2022 10:14.

Job Title/Post:	Acting Head of Research Quality & Policy
Organisation:	Lancaster University
Email:	c.odonnell@lancaster.ac.uk

D3. Declaration for student projects by academic supervisor(s)

1. I have read and approved both the research proposal and this application. I am satisfied that the scientific contentof the research is satisfactory for an educational qualification at this level.

2. I undertake to fulfil the responsibilities of the supervisor for this study as set out in the UK Policy Framework forHealth and Social Care Research.

3. I take responsibility for ensuring that this study is conducted in accordance with the ethical principles underlyingthe Declaration of Helsinki and good practice guidelines on the proper conduct of research, in conjunction with clinical supervisors as appropriate.

4. I take responsibility for ensuring that the applicant is up to date and complies with the requirements of the law andrelevant guidelines relating to security and confidentiality of patient and other personal data, in conjunction with clinical supervisors as appropriate.

Academic supervisor 1

This section was signed electronically by Dr Amy Ashton on 01/02/2022 17:05.

Job Title/Post:	Consultant Clinical Psychologist
Organisation:	Lancashire Teaching Hospitals NHS Foundation Trust
Email:	amy.ashton@lthtr.nhs.uk

Academic supervisor 2

This section was signed electronically by Prof William Sellwood on 01/02/2022 17:02.

Job Title/Post:	Professor of Clinical Psychology
Organisation:	Lancaster University
Email:	b.sellwood@lancaster.ac.uk

Appendix B: FHMREC Ethical Approval Letter

Applicant: Beth Parker

Supervisor: Ian Fletcher

Department: DHR

FHMREC Reference: FHMREC21002

02 November 2021

Re: FHMREC21002
The relationship between emotional intelligence, self-compassion and wellbeing in ambulance staff

Dear Beth,

Thank you for submitting your research ethics application for the above project for review by the **Faculty of Health and Medicine Research Ethics Committee (FHMREC)**. The application was recommended for approval by FHMREC, and on behalf of the Chair of the Committee, I can confirm that approval has been granted for this research project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer at the email address below (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress);
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact me if you have any queries or require further information.

Email: fhmresearchsupport@lancaster.ac.uk

Yours sincerely,

T. Morley

Tom Morley,

Research Ethics Officer, Secretary to FHMREC.

Appendix C: HRA Approval Letter

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

NHS
Health Research Authority

Professor Bill Sellwood

Health Innovation One

Sir John Fisher Drive

Lancaster

LA1 4AT

18 March 2022

Dear Professor Sellwood

HRA and Health and Care

Study title:	**The relationship between emotional intelligence, selfcompassion and wellbeing in ambulance staff.**
IRAS project ID:	**303396**
Protocol number:	**N/A**
REC reference:	**22/HRA/0477**
Sponsor	**Lancaster University**

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

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

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

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

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

How should I work with participating non-NHS organisations?

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

What are my notification responsibilities during the study?

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

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

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

Who should I contact for further information?

Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **303396**. Please quote this on all correspondence.

Yours sincerely,

Carolyn Halliwell

Approvals Specialist

Email: approvals@hra.nhs.uk

Copy to: *Ms Claire O'Donnell* **List of Documents**

The final document set assessed and approved by HRA and HCRW Approval is listed below.

Document	*Version*	*Date*
Copies of materials calling attention of potential participants to the research [Poster advert]	0.1	07 October 2021
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Public Liability Insurance]	N/A	01 July 2021

IRAS Application Form [IRAS_Form_02022022]		02 February 2022
Letter from sponsor [University Sponsorship Letter]	N/A	04 January 2022
Letters of invitation to participant [Participant email invitation]	0.2	17 December 2021
Non-validated questionnaire [Demographic Questionnaire]	0.2	10 December 2021
Participant consent form [Participant Consent Form]	0.1	25 February 2022
Participant information sheet (PIS) [Debrief and email submission form]	0.6	25 February 2022
Participant information sheet (PIS) [Participant Information Sheet]	0.6	25 February 2022
Referee's report or other scientific critique report [University approval of proposal]	N/A	28 June 2021
Research protocol or project proposal [Research Proposal]	0.7	07 February 2022
Summary CV for Chief Investigator (CI) [Chief Investigator's CV]	1	27 January 2022
Summary CV for student [Beth Parker CV]	1	19 November 2021
Summary CV for supervisor (student research) [Academic supervisor CV]	1	07 February 2022
Validated questionnaire [Professional Quality of Life Scale Version 5]		
Validated questionnaire [Warwick Edinburgh Mental Wellbeing Scale]		
Validated questionnaire [Schutte Self-report Emotional Intelligence Test]		
Validated questionnaire [Self-Compassion Scale]		

Appendix D: Participant Information Sheet and Consent Wording version 0.6

The relationship between emotional intelligence, self-compassion and wellbeing in ambulance staff

Lancaster University will be the data controller for any personal information collected as part of this study. Under the GDPR you have certain rights when personal data is collected about you. You have the right to access any personal data held about you, to object to the processing of your personal information, to rectify personal data if it is inaccurate, the right to have data about you erased and, depending on the circumstances, the right to data portability. Please be aware that many of these rights are not absolute and only apply in certain circumstances. If you would like to know more about your rights in relation to your personal data, please speak to the researcher on your particular study.

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

My name is Beth Parker and I am conducting this research as a trainee on the Doctorate in Clinical Psychology programme at Lancaster University, United Kingdom.

What is the study about?
The purpose of this study is to explore whether an individual's wellbeing is affected by the kindness they show themselves and their ability to understand and manage the emotions of themselves and others. The results may help to inform ambulance services on how to appropriately support staff to manage their emotions and the emotions of patients and their families during very demanding situations.

Why have I been approached?
You have been approached because the study requires information from people who currently work on emergency ambulances for the NHS and have direct patient contact as part of their role.

Do I have to take part?
No. It is completely up to you to decide whether or not you would like to take part. If you decide to take part, you will be asked to confirm your consent on the next page. You are free to withdraw at any point during the survey, until you submit your responses at the end. After this point, it will not be possible to withdraw your data as the information will be anonymous.

What will I be asked to do if I take part?
If you decide to take part, you will be asked to complete an online survey. You will be asked some questions about your demographic and professional background. You will then be asked to complete four questionnaires about your emotional intelligence, self-compassion and wellbeing. The online survey is expected to take no longer than 20-30 minutes.

Will my data be identifiable?

- All data will be anonymous.
- The data collected for this study will be stored securely on University approved secure cloud storage and only the researcher and supervisors involved in this study will have access to this data. Any email addresses provided will be stored separately from your survey responses and will be deleted once summaries of the results have been sent out.
- Once the study has been completed, the data from the survey responses will be encrypted and transferred electronically to the course Research Coordinator and retained for 10 years before being deleted. The archived documents will be stored on University approved secure cloud storage. Thus, the DClinPsy admin team will have access to the anonymised questionnaire data once it is transferred.

What will happen to the results?

The results will be summarised and reported in a thesis and may be submitted for publication in an academic or professional journal or presented at conferences.

If you would like to receive a summary of the results, you will have the opportunity to provide your email address at the end of the survey. Summaries will be sent out via email following the completion of the study, expected to be March 2023.

Are there any risks?

There are no risks anticipated with participating in this study. However, if you experience any distress following participation you are encouraged to inform the researcher and contact the resources provided at the end of this sheet.

Are there any benefits to taking part?

Although you may find participating interesting, there are no direct benefits to taking part.

Who has reviewed the project?

This study has been reviewed and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University and NHS Research and Development. The sponsor for the study is Lancaster University.

Where can I obtain further information about the study if I need it?

If you have any questions about the study, please contact the main researcher, Beth Parker at b.parker@lancaster.ac.uk.

Alternatively, you can contact the research supervisor for this project:
Dr Fiona Eccles (Lecturer at Lancaster University)
Email: f.eccles@lancaster.ac.uk

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Dr Ian Smith (Research Director)

Tel: (01524) 592282
Email: i.smith@lancaster.ac.uk
Lancaster University
Lancaster
LA1 4YW

If you wish to speak to someone outside of the Clinical Psychology Doctorate Programme, you may also contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email: l.machin@lancaster.ac.uk
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

Thank you for taking the time to read this information sheet.

Resources in the event of distress
Should you feel distressed either as a result of taking part, or in the future, the following resources for ambulance staff may be of assistance:

College of Paramedics 'Your Mental Health' Page: This web page includes information and links to support services which offer practical help and online resources, contact details of approved organisations that provide free access to counselling, qualified therapists and registered practitioner psychological support, and tips on how to access support and how to support your health and wellbeing. You can visit their website at:
https://collegeofparamedics.co.uk/COP/Member_/Paramedic_Mental_Health_and_Wellbeing.aspx

NHS Practitioner Health: This NHS website offers information and links to resources to support you in managing your wellbeing, and services which offer free mental health support. Visit their website at: https://www.practitionerhealth.nhs.uk/wellbeing-and-mental-health-for-paramedi

The Ambulance Staff Charity (TASC): TASC support serving and retired ambulance staff, their families, students and ambulance service volunteers. Services include counselling, support with trauma and PTSD, physiotherapy, financial guidance, grants, bereavement support and general wellbeing advice. You can contact them on 0800 1032 999 or visit their website for more details: https://www.theasc.org.uk/

The following resources may also be helpful:

The Samaritans: The Samaritans hotline offers a safe place for you to talk about anything that is bothering you. You can contact them on 116 123 at any time or visit the website for more details: https://www.samaritans.org/

MIND: MIND provide advice and support to people who are experiencing mental health difficulties. You can contact them on 0300 123 3393 and or email them at info@mind.org.uk. Their website offers information on the services they provide: https://www.mind.org.uk

CALM: CALM, or Campaign Against Living Miserably, offers a free, anonymous helpline and webchat service, offering help, advice and information to anyone who is struggling or in crisis. You can contact them on 0800 58 58 58 (daily, 5pm to midnight) or visit their website for more details: https://www.thecalmzone.net/

You can also contact your GP or another healthcare professional for advice.

By proceeding to the survey, you confirm that:

- You work on an emergency ambulance within the NHS and have face-to-face patient contact as part of your role
- You have read the participant information sheet version… and understand what is expected of you within this study
- You understand that any responses you give will remain anonymous
- Your participation is voluntary and you can withdraw at any time during the survey
- Once you have submitted your responses, it will not be possible to withdraw your data as your responses are anonymous
- You consent for the information you provide to be discussed with the project research supervisor at Lancaster University
- You consent that the anonymised data will be pooled and may be published
- You consent to Lancaster University keeping the anonymised data for a period of 10 years after the study has finished

By continuing with the survey, you agree that you understand the points outlined in the participant information sheet version 0.7 and the above consent form, and consent to **taking part in the current study.**

Appendix E: Participant Questionnaire Pack

Demographics Questionnaire version 0.2

Gender

☐ Male

☐ Female

☐ Prefer not to say

☐ Prefer to self-describe: ……

Ethnicity

Please choose one option that best describes your ethnic group or background

White:

☐ English/Welsh/Scottish/Northern Irish/British

☐ Irish

☐ Any other White background, please describe: ……

Mixed/Multiple ethnic groups:

☐ White and Black Caribbean

☐ White and Black African

☐ White and Asian

☐ Any other Mixed/Multiple ethnic background, please describe: ……

Asian/Asian British:

☐ Indian

☐ Pakistani

☐ Bangladeshi

☐ Chinese

☐ Any other Asian background, please describe: ……

Black/African/Caribbean/Black British:

☐ African

☐ Caribbean

☐ Any other Black/African/Caribbean background, please describe: ……

Other ethnic group:

☐ Arab

☐ Any other ethnic group, please describe: ……

☐ Prefer not to say

Age

☐ 18-24

☐ 25-34

☐ 35-44
☐ 45-54
☐ 55-64
☐ 55-64
☐ 65+

Job Role

☐ Paramedic
☐ Emergency Medical Technician
☐ Emergency Care Assistant
☐ Other, please specify: ……

Number of years working on emergency ambulances

☐ 0-1
☐ 1-5
☐ 6-10
☐ 11-15
☐ 16-20
☐ 21-25
☐ 26-30
☐ 30+

The Schutte Self Report Emotional Intelligence Test (SREIT)

Please indicate the extent to which each item applies to you.

		1 - Strongly Disagree	2 - Disagree	3 - Neither agree nor disagree	4 - Agree	5 – Strongly Agree
1	**I know when to speak about my personal problems to others**	☐	☐	☐	☐	☐
2	**When I am faced with obstacles, I remember times I faced similar obstacles and overcame them**	☐	☐	☐	☐	☐
3	**I expect that I will do well on most things I try**	☐	☐	☐	☐	☐
4	**Other people find it easy to confide in me**	☐	☐	☐	☐	☐
5	**I find it hard to understand the non-verbal messages of other people**	☐	☐	☐	☐	☐
6	**Some of the major events of my life have led me to re-evaluate what is important and not important**	☐	☐	☐	☐	☐
7	**When my mood changes, I see new possibilities**	☐	☐	☐	☐	☐
8	**Emotions are one of the things that make my life worth living**	☐	☐	☐	☐	☐

9	**I am aware of my emotions as I experience them**	☐	☐	☐	☐	☐
10	**I expect good things to happen**	☐	☐	☐	☐	☐
11	**I like to share my emotions with others**	☐	☐	☐	☐	☐
12	**When I experience a positive emotion, I know how to make it last**	☐	☐	☐	☐	☐
13	**I arrange events others enjoy**	☐	☐	☐	☐	☐
14	**I seek out activities that make me happy**	☐	☐	☐	☐	☐
15	**I am aware of the non-verbal messages I send to others**	☐	☐	☐	☐	☐
16	**I present myself in a way that makes a good impression on others**	☐	☐	☐	☐	☐
17	**When I am in a positive mood, solving problems is easy for me**	☐	☐	☐	☐	☐
18	**By looking at their facial expressions, I recognize the emotions people are experiencing**	☐	☐	☐	☐	☐
19	**I know why my emotions change**	☐	☐	☐	☐	☐
20	**When I am in a positive mood, I am able to come up with new ideas**	☐	☐	☐	☐	☐
21	**I have control over my emotions**	☐	☐	☐	☐	☐
22	**I easily recognize my emotions as I experience them**	☐	☐	☐	☐	☐
23	**I motivate myself by imagining a good outcome to tasks I take on**	☐	☐	☐	☐	☐
24	**I compliment others when they have done something well**	☐	☐	☐	☐	☐
25	**I am aware of the non-verbal messages other people send**	☐	☐	☐	☐	☐
26	**When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself**	☐	☐	☐	☐	☐
27	**When I feel a change in emotions, I tend to come up with new ideas**	☐	☐	☐	☐	☐
28	**When I am faced with a challenge, I give up because I believe I will fail**	☐	☐	☐	☐	☐
29	**I know what other people are feeling just by looking at them**	☐	☐	☐	☐	☐
30	**I help other people feel better when they are down**	☐	☐	☐	☐	☐
31	**I use good moods to help myself keep trying in the face of obstacles**	☐	☐	☐	☐	☐
32	**I can tell how people are feeling by listening to the tone of their voice**	☐	☐	☐	☐	☐
33	**It is difficult for me to understand why people feel the way they do**	☐	☐	☐	☐	☐

Self-Compassion Scale (SCS)

Please read each statement carefully before answering and indicate how often you behave in the stated manner. How I typically act towards myself in difficult times:

		1 - Almost Never	2 - Occasionally	3 - About half the time	4 - Fairly Often	5 - Almost Always
1	**I'm disapproving and judgmental about my own flaws and inadequacies**	☐	☐	☐	☐	☐
2	**When I'm feeling down I tend to obsess and fixate on everything that's wrong**	☐	☐	☐	☐	☐
3	**When things are going badly for me, I see the difficulties as part of life that everyone goes through**	☐	☐	☐	☐	☐
4	**When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world**	☐	☐	☐	☐	☐
5	**I try to be loving towards myself when I'm feeling emotional pain**	☐	☐	☐	☐	☐
6	**When I fail at something important to me I become consumed by feelings of inadequacy**	☐	☐	☐	☐	☐
7	**When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am**	☐	☐	☐	☐	☐
8	**When times are really difficult, I tend to be tough on myself**	☐	☐	☐	☐	☐
9	**When something upsets me I try to keep my emotions in balance**	☐	☐	☐	☐	☐
10	**When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people**	☐	☐	☐	☐	☐
11	**I'm intolerant and impatient towards those aspects of my personality I don't like**	☐	☐	☐	☐	☐
12	**When I'm going through a very hard time, I give myself the caring and tenderness I need**	☐	☐	☐	☐	☐
13	**When I'm feeling down, I tend to feel like most other people are probably happier than I am**	☐	☐	☐	☐	☐
14	**When something painful happens I try to take a balanced view of the situation**	☐	☐	☐	☐	☐
15	**I try to see my failings as part of the human condition**	☐	☐	☐	☐	☐
16	**When I see aspects of myself that I don't like, I get down on myself**	☐	☐	☐	☐	☐
17	**When I fail at something important to me I try to keep things in perspective**	☐	☐	☐	☐	☐
18	**When I'm really struggling, I tend to feel like other people must be having an easier time of it**	☐	☐	☐	☐	☐
19	**I'm kind to myself when I'm experiencing suffering**	☐	☐	☐	☐	☐
20	**When something upsets me I get carried away with my feelings**	☐	☐	☐	☐	☐
21	**I can be a bit cold-hearted towards myself when I'm experiencing suffering**	☐	☐	☐	☐	☐

22	**When I'm feeling down I try to approach my feelings with curiosity and openness**	☐	☐	☐	☐	☐
23	**I'm tolerant of my own flaws and inadequacies**	☐	☐	☐	☐	☐
24	**When something painful happens I tend to blow the incident out of proportion**	☐	☐	☐	☐	☐
25	**When I fail at something that's important to me, I tend to feel alone in my failure**	☐	☐	☐	☐	☐
26	**I try to be understanding and patient towards those aspects of my personality I don't like**	☐	☐	☐	☐	☐

Professional Quality of Life Scale (ProQOL)

When you help people, you have direct contact with their lives. As you may have found, your compassion for those you help can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a helper. In this case, your experiences as a helper refers to your role as a staff member working on emergency ambulances.

Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the last 30 days.

		1 - Never	2 - Rarely	3 - Sometimes	4 - Often	5 – Very Often
1	I am happy	☐	☐	☐	☐	☐
2	I am preoccupied with more than one person I help	☐	☐	☐	☐	☐
3	I get satisfaction from being able to help people	☐	☐	☐	☐	☐
4	I feel connected to others	☐	☐	☐	☐	☐
5	I jump or am startled by unexpected sounds	☐	☐	☐	☐	☐
6	I feel invigorated after working with those I help	☐	☐	☐	☐	☐
7	I find it difficult to separate my personal life from my life as a helper	☐	☐	☐	☐	☐
8	I am not as productive at work because I am losing sleep over traumatic experiences of a person I helped	☐	☐	☐	☐	☐
9	I think that I might have been affected by the traumatic stress of those I help	☐	☐	☐	☐	☐
10	I feel trapped by my job as a helper	☐	☐	☐	☐	☐
11	Because of my helping, I have felt "on edge" about various things	☐	☐	☐	☐	☐
12	I like my work as a helper	☐	☐	☐	☐	☐
13	I feel depressed because of the traumatic experiences of the people I help	☐	☐	☐	☐	☐
14	I feel as though I am experiencing the trauma of someone I have helped	☐	☐	☐	☐	☐
15	I have beliefs that sustain me	☐	☐	☐	☐	☐
16	I am pleased with how I am able to keep up with helping techniques and protocols	☐	☐	☐	☐	☐
17	I am the person I always wanted to be	☐	☐	☐	☐	☐
18	My work makes me feel satisfied	☐	☐	☐	☐	☐

19	I feel worn out because of my work as a helper	☐	☐	☐	☐	☐
20	I have happy thoughts and feelings about those I help and how I could help them	☐	☐	☐	☐	☐
21	I feel overwhelmed because my workload seems endless	☐	☐	☐	☐	☐
22	I believe I can make a difference through my work	☐	☐	☐	☐	☐
23	I avoid certain activities or situations because they remind me of frightening experiences of the people I help	☐	☐	☐	☐	☐
24	I am proud of what I can do to help	☐	☐	☐	☐	☐
25	As a result of my helping, I have intrusive, frightening thoughts	☐	☐	☐	☐	☐
26	I feel "bogged down" by the system	☐	☐	☐	☐	☐
27	I have thoughts that I am a "success" as a helper	☐	☐	☐	☐	☐
28	I can't recall important parts of my work with trauma victims	☐	☐	☐	☐	☐
29	I am a very caring person	☐	☐	☐	☐	☐
30	I am happy that I chose to do this work	☐	☐	☐	☐	☐

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts.
Please tick the box that best describes your experience of each over the last 2 weeks.

Statements	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been feeling useful	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been feeling relaxed	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been feeling interested in other people	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've had energy to spare	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been dealing with problems well	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been thinking clearly	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been feeling good about myself	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been feeling close to other people	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been feeling confident	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been able to make up my own mind about things	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been feeling loved	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been interested in new things	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I've been feeling cheerful	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Appendix F: Participant Debrief Sheet version 0.6

Thank you for taking part in this study exploring whether an individual's emotional intelligence and self-compassion affect their wellbeing.

If you would like to receive a summary of the findings following the completion of the project, please provide your email address on the next page.

Should you feel distressed either as a result of taking part, or in the future, the following resources for ambulance staff may be of assistance:

- **College of Paramedics 'Your Mental Health' Page: This web page includes information and links to support services which offer practical help and online resources, contact details of approved organisations that provide free access to counselling, qualified therapists and registered practitioner psychological support, and tips on how to access support and how to support your health and wellbeing. You can visit their website at:** https://collegeofparamedics.co.uk/COP/Member_/Paramedic_Mental_Health_and_Wellbeing.aspx
- **NHS Practitioner Health: This NHS website offers information and links to resources to support you in managing your wellbeing, and services which offer free mental health support. Visit their website at:** https://www.practitionerhealth.nhs.uk/wellbeing-and-mental-health-for-paramedi
- **The Ambulance Staff Charity (TASC):** TASC support serving and retired ambulance staff, their families, students and ambulance service volunteers. Services include counselling, support with trauma and PTSD, physiotherapy, financial guidance, grants, bereavement support and general wellbeing advice. You can contact them on 0800 1032 999 or visit their website for more details: https://www.theasc.org.uk/

The following resources may also be helpful:

- **The Samaritans:** The Samaritans hotline offers a safe place for you to talk about anything that is bothering you. You can contact them on 116 123 at any time or visit the website for more details: https://www.samaritans.org/
- **MIND:** MIND provide advice and support to people who are experiencing mental health difficulties. You can contact them on 0300 123 3393 and or email them at info@mind.org.uk. Their website offers information on the services they provide: https://www.mind.org.uk
- **CALM:** CALM, or Campaign Against Living Miserably, offers a free, anonymous helpline and webchat service, offering help, advice and information to anyone who is struggling or in crisis. You can contact them on 0800 58 58 58 (daily, 5pm to midnight) or visit their website for more details: https://www.thecalmzone.net/

If you would like to receive a summary of the findings following the completion of the project, please contact the researcher via email at b.parker@lancaster.ac.uk with your preferred email address.

Appendix G: Study Poster Advert version 0.1

Health & Medicine | Lancaster University

The Relationship between Emotional Intelligence, Self-Compassion and Wellbeing in Ambulance Staff

Do you work on an NHS emergency ambulance?

We are looking for ambulance staff who have patient contact as part of their role to help us with a project. We are exploring the relationship between emotional intelligence, self-compassion and wellbeing in ambulance staff.

Taking part will involve completing some questionnaires online and should take no longer than 20-30 minutes.

How do I participate?

For more information and to complete the survey, please visit:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_1FTg8qRgHjGk8HI

Or, scan the VR code below:

If you are interested in taking part and would like more information, please contact b.parker@lancaster.ac.uk. Alternatively, you can click on the link above to access the online survey directly.