'In Harm's Way': Compassion, Forgiveness, and Moral Injury in Emergency Work

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Word Count Summary	
Section	**Word Count**
Thesis Overview	625
Literature Review	10618
Empirical Paper	13093
Appendices	87
Total	**24,423**

Thesis overview

Emergency Responders (ER), including police, firefighters, paramedics, and emergency medicine staff, make essential and profound contributions to society. ER put themselves in harm's way to promote the survival, protection, and safety of others. Working in emergencies is often experienced as challenging yet highly rewarding work (Oliveira et al., 2020). Taking on the role of ER can also have significant impacts on the person in the uniform. There is reported to be a higher prevalence of mental health difficulties for ER, sleep difficulties and problems arising from the abuse of alcohol (Jones et al., 2020; Lanza et al., 2018). ER operate within distressing and disturbing situations, witnessing human suffering, cruelty, and death (Murray, 2019). ER may work within contexts of multiple casualties, suicide, and the death of children. ER may have to come to terms with not being able to save a life and then having to share the news with that individual's loved ones. ER are faced with ethical dilemmas, in the context of high stakes, limited time and resource (Fayed, 2021). In short, working in life and death contexts can result in moral, existential, and philosophical pain.

This thesis aims to explore the psychological, emotional, and moral impact of emergency working. The first chapter presents a systematic review to investigate the existing evidence base regarding processes of compassion and forgiveness towards self and towards others in reducing symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD) for ER. Results of the review indicate that there is a relationship between self-compassion and reduced anxiety, depression, and PTSD symptoms in ER. Intervention studies indicate that

practising compassion for self and for others may contribute to improved mental health for ER, when delivered in conjunction with mindfulness interventions or trauma-focused Cognitive Behavioural Therapy. The review yielded few results on forgiveness for self and other, with initial results indicating that firefighters with greater depression and PTSD symptoms also score lower on measures of self-forgiveness. Forgiving the self and forgiving others was a core component of a Christian peer-led programme for First Responders which saw improvements in mental health symptoms post intervention. Due to the limited research, it was difficult to draw conclusions on the contribution of forgiveness to reduce mental health symptoms in ER. Results suggest that compassion and forgiveness with ER are promising areas for future research, and the field would particularly benefit from longitudinal research which explores these factors alongside the impact of cumulative exposure to potentially traumatic events.

The second chapter presents an empirical study exploring the concept of Moral Injury in ER. A Q-sort design was used to explore what opinions exist on Moral Injury for ER. Seven consultations with ER informed the development of 45 opinion statements about Moral Injury. 21 ER then individually sorted these statements to best represent their personal viewpoint. A by person factor analysis identified three composite viewpoints: 1) Trying to help while feeling hated, misunderstood, and undervalued, 2) Eaten away by the work, 3) ‘It’s all on me’: personal responsibility, and personal protection. The impact of cumulative years of work, hostile public, and media attitudes, and operating within unsupportive organisations were important themes in ER viewpoints. Results indicate that Moral Injury is a meaningful concept for ER with key implications for research and clinical practice. Results support the research literature regarding the centrality of social isolation in Moral Injury

48 (Koenig & Zaben, 2021) and the author therefore proposes the potential utility of group-
49 based interventions. The COVID-19 pandemic highlighted the impact of working in front-line
50 professions. Clinical Psychologists are well placed to turn their expertise to support staff
51 (Williams et al., 2021). This thesis aims to provide the clinical psychology community with
52 key insights for possible contributions to support ER who have been morally injured at work.

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Chapter 1

Literature Review

Are Compassion and Forgiveness for Self and Other Associated with Reduced Depression, Anxiety, and PTSD symptoms in Emergency Responders? A Systematic Review.

81 **Abstract**

82

83 **Introduction:** Emergency Responders (ER) are considered to be at increased risk of mental
84 health difficulties including anxiety, depression, and Post Traumatic Stress Disorder (PTSD).
85 Compassion and forgiveness for self and other, referred to here as (self) compassion and
86 (self) forgiveness, are associated with reduced anxiety, depression, and PTSD symptoms.
87 Due to the specific contexts in which ER work, and the likelihood of cumulative ongoing
88 exposure to potentially traumatic situations, it may not be possible to generalise about ER's
89 psychological needs based on the evidence from other populations. It is important to better
90 understand the current evidence regarding (self) compassion and (self) forgiveness for
91 mental health symptoms specifically for ER.
92 **Methods:** A systematic review of PubMed, MEDLINE, Web of Science, APA PsycINFO
93 alongside Google Scholar citation searching was conducted in April 2022. Searches yielded
94 1,184 initial results, which were screened against a priori inclusion and exclusion criteria.
95 The quality of included papers was assessed by two reviewers independently.
96 **Results:** Ten research studies met the inclusion criteria, including six cross-sectional studies
97 and four intervention studies. Police were the most represented population, followed by
98 firefighters. Eight studies explored (self) compassion, three focused on self-compassion only,
99 four investigated both self and other focused compassion practices, and one intervention
100 study did not specifically state the focus of compassion practises. Cross-sectional results
101 indicate a negative association between self-compassion and anxiety, depression, and PTSD
102 symptoms. Intervention studies indicate (self) compassion may reduce anxiety, depression,
103 PTSD symptoms for police and firefighters when delivered in conjunction with mindfulness
104 and trauma-focused Cognitive Behavioural Therapy. Two studies explored (self) forgiveness,

one study focused on self-forgiveness only, one study included both self-forgiveness and forgiveness for others. Cross-sectional results indicate firefighters who reported lower levels of self-forgiveness also reported higher levels of depression and PTSD symptoms.

Conclusion: This review provides promising early evidence of the relationship between (self) compassion and reduced anxiety, depression, and PTSD symptoms for ER. Initial findings indicate that (self) forgiveness is a useful focus for future research regarding the mental health of ER. Findings should be interpreted in the context of a small number of studies that involved ER from different professions, working in different contexts across different countries.

Key words*: (Self) Compassion, (Self) Forgiveness, Emergency Responders, Depression, Anxiety, Post Traumatic Stress Disorder*

Introduction

Emergency Responders

Society asks a great deal of emergency responders (ER). They are expected to remain calm and make effective decisions, managing uncertainty, limited resource, and time pressures in the context of human suffering, and the risk of death (Jones, 2017). This review uses the term ER to refer to individuals who work in a variety of emergency contexts, including but not restricted to, fire, police, ambulance services, and emergency medicine. This term aims to capture a wider range of professions compared with the term First Responder. For

127 example, an urgent care nurse works in numerous emergency contexts, however, is often
128 not the ‘first’ professional to respond. There are many potential impacts of working in
129 emergencies. This includes the numerous potential impacts of shift work on sleep, physical
130 and mental health, opportunity to maintain social connections and overall quality of life
131 (Brown et al., 2020). ERs’ work expects them to act against the biological and evolutionary
132 drive to panic or run away in the context of danger (Chopko et al., 2018). ER witness human
133 suffering as part of their work and regularly experience dangerous situations that would
134 otherwise be rare occurrences for most people (Oliveira et al., 2019). A systematic review by
135 Alden and colleagues presents that close to 90% of First Responders describe repeated
136 workplace exposure to witnessing death and horrific injuries, or direct threats to their own
137 lives (2021).

138

139 **The Cost of Caring**

140 A systematic review completed in 2017 reported that many studies found prevalence rates
141 of PTSD, depression, suicidality, anxiety, problematic alcohol use, and sleep difficulties
142 amongst First Responders exceeded those in the general population (Jones et al, 2017).
143 More recently, a systematic review of staff working in emergency departments also
144 indicated increased rates of PTSD, anxiety, and depression compared with the general
145 population (Matthews et al., 2022). ER are additionally vulnerable to the psychological
146 impacts of their work because they are expected to repeatedly put themselves in potentially
147 traumatic situations. It is suggested that trauma has a dose–response effect, where prior
148 exposure to trauma creates greater risk of PTSD from subsequent trauma (Hamby et al.,
149 2021). The impact of cumulative traumatic experience may result in more severe

150 experiences of PTSD symptoms, as well as wider impacts for the individual including to their
151 self-concept and relationships (Winders et al., 2020). The DSM-V definition of PTSD
152 recognises the importance of self-conscious and moral emotions including shame, guilt, and
153 self-focused disgust (Beaumont et al., 2016). This indicates that the potential impact of
154 traumatic exposure extends wider than fear, it can impact the person's relationship with the
155 self and with others, as well as introducing wider questions about existence, morality, and
156 meaning. In a qualitative study of ambulance workers experiences, one participant
157 acknowledged the wider impact of potentially traumatic events: 'these events lead us to
158 think about our lives' (Oliveira et al., 2019 p.476).
159

160 **Psychological Support**

161 There has been increasing research interest into how to support the psychological wellbeing
162 of ER. Qualitative research with ambulance workers has identified a lack of psychological
163 support as well as a reluctance for workers to access formal support (Oliveira, et al., 2019).
164 The culture in many emergency professions may promote the idea that ER are expected to
165 be stronger or more resilient than the general population (Alden et al., 2021), which may act
166 as a further barrier to help seeking, and lead to increased levels of self-blame or self-
167 criticism. There has been a growing interest in the role of Moral Injury for emergency and
168 front-line workers, exploring the impact of witnessing or being part of something that
169 violates your values (Litz et al., 2009). Therefore, there has been interest in interventions
170 which focus on a moral or spiritual component (Harris et al., 2018). Further, as Moral Injury
171 is associated with feelings of shame, guilt, anger, and betrayal, it is helpful to review
172 literature for emergency workers alongside aspects of Compassion Focused Therapy (CFT)

173 (Gilbert, 2010), given the utility of CFT for experiences of high levels of guilt and shame
174 (Irons, & Lad, 2017, Gilbert, 2019). In addition, there is also a growing evidence base for the
175 role of CFT approaches in the treatment of trauma (Kearney et al., 2013, Hiraoka et al.,
176 2015), including specifically CFT for trauma with firefighters (Beaumont et al, 2016). Given
177 the high expectations society places on ER to repeatedly operate in unknown, dangerous,
178 and emotionally painful circumstances, there is a wider responsibility of society to offer
179 responsive and effective support for ER.
180

181 **(Self) Compassion**

182 Compassion can be defined as the acknowledgement of the universality of suffering, the
183 ability to recognise others suffering and want to alleviate it (López et al., 2018). Self-
184 compassion has been defined by Neff (2003) as containing three components, self-kindness,
185 common humanity, and mindfulness. The relationship between compassion (other-
186 compassion) and self-compassion is unclear. From a Buddhist psychology position,
187 cultivating compassion may mean an individual can extend compassion to multiple targets,
188 and thus self-compassion is simply compassion turned inwards (Neff & Pommier, 2013).
189 There is conceptual overlap between compassion and self-compassion, as both involve an
190 awareness of common humanity and mindfulness (Khoury, 2019). However, results by López
191 et al. (2018) report that there was not a significant correlation between compassion and
192 self-compassion in a general population sample. Further, whilst self-compassion was
193 associated with lower depressive symptoms, compassion was not significantly related to
194 psychological wellbeing. Which may indicate that compassion and self-compassion are
195 distinct from each-other. The authors argue that an important difference is that compassion
196 is a social construct, linked to evolutionary mate selection and in group cohesion (López et

197 al., 2018). Self-compassion in contrast is an individual construct that may rely on more
198 complex cognitive processing (2018). On the other hand, Neff and Pommier's study
199 comparing undergraduates (with a mean age of 21), community adults (with a mean age of
200 33) and Buddhist meditators (with a mean age of 48) concluded that self-compassion is
201 associated with compassion for others, but the strength of this relationship depends on
202 stage of life, meditation experience and gender, with women showing weaker associations
203 than men (2013). Research with Italian workers found that aspects of trait emotional
204 intelligence were associated with both compassion and self-compassion (Di Fabio &
205 Saklofske, 2021). A review by Khoury (2019) proposes a conceptualisation of compassion
206 that involves both self and other, comprised of cognitive, emotional, and behavioural
207 components, embedded within an individual's interpersonal context. Khoury argues that
208 openness to receiving compassion from others is central in self-compassion and awareness
209 of one's own suffering may also help cultivate compassion for others (2019).

210

211 CFT proposes a model of (self) compassion informed by evolutionary, attachment and
212 cognitive theory (Gilbert, 2010). CFT proposes three internal systems, the threat system
213 which functions to keep an individual safe and alert to danger, the drive system which helps
214 the individual strive towards their needs and wants and the soothe system which helps the
215 individual regulate and relax (2010). A sensitive and high-alert threat system may either be a
216 requirement or a consequence of being exposed to potentially traumatic events at work and
217 thus there is application of (self) compassion practices for ER which may strengthen the
218 soothe system and support emotional regulation (Gilbert, 2010). Research indicates a large
219 effect size for the relationship between greater self-compassion and lower levels of

220 depression, anxiety, and stress (MacBeth & Gumley, 2012). Further, different self-

221 compassion practices in clinical interventions have been associated with reduced mental

222 health symptoms. A pilot study investigating interventions that include self-compassion

223 instructions both implicitly (Mindfulness Based Cognitive Behavioural Therapy) and explicitly

224 (CFT) found that both interventions led to increased self-compassion, reduced depression,

225 anxiety, and stress (Frostadottir & Dorjee, 2019). Self-compassionate individuals tend to

226 treat themselves with kindness, common humanity and in the context of trauma exposure

227 may blame themselves less and not rely on avoidant coping strategies (Neff, 2003, Hamrick

228 & Owens, 2019). A systematic review and meta-analysis including clinical and nonclinical

229 samples found there to be a moderate protective role of self-compassion for PTSD

230 symptoms (Luo et al., 2021).

231

232 **(Self) Forgiveness**

233 (Self) forgiveness can be defined as an adaptive trait or behaviour associated with

234 renunciation of anger and resentment (Thompson et al., 2005). Thompson and colleagues'

235 definition of forgiveness identifies the importance of reframing a transgression or

236 transgressor (which may be oneself, another person, or situation beyond anyone's control)

237 from negative to neutral or positive (2005). Macaskill (2012) argues that Beck's cognitive

238 therapy for depression highlights important distinctions between forgiveness (other-

239 forgiveness) and self-forgiveness, whereby people tend to judge themselves by more harsh,

240 rigid or unyielding standards compared to how they judge others. This was supported by

241 Macaskill's findings which indicate a significant relationship between mental health and life

242 satisfaction for self-forgiveness but not for forgiveness for others. Although Macaskill's

243 research did identify a small yet significant association between forgiveness and self-
244 forgiveness and both to be associated with anger, the results suggest that shame and
245 anxiety may be uniquely related to self-forgiveness (2012).

246 There is growing evidence that (self) forgiveness might be protective against mental health
247 symptoms of anxiety, depression, and PTSD. Forgiveness and self-forgiveness have been
248 found to have significant negative correlations with trait anxiety and trait depression and
249 positively correlated with both positive mental health and positive relations with others,
250 with a stronger correlation for each with self-forgiveness (Tenklova & Slezackova, 2016).
251 Further indicating the possibility that self-forgiveness may have a more significant influence
252 on mental health. A meta-analysis by Davis and colleagues indicated that self-forgiveness
253 robustly predicted psychological wellbeing. Self-forgiveness had negative associations with
254 trait and state anxiety, trauma symptoms, depression, suicide symptoms, alcohol symptoms,
255 state guilt, and state shame (2015). Authors state in their results that self-forgiveness
256 accounted for around 20% of the variance in psychological wellbeing (combined from
257 measures of depression, anxiety, life satisfaction and general mental health) (2015). Two
258 separate systematic reviews and meta-analyses have argued for the effectiveness of
259 forgiveness interventions for mental health symptoms. Wade and colleagues (2014) indicate
260 that forgiveness interventions for those who have experienced interpersonal hurts are more
261 effective than no treatment alternatives in reducing depression, anxiety and promoting
262 hope for the future. Further, Akhtar and Barlow concluded that forgiveness therapy reduces
263 depression, stress and distress and promotes positive emotions (2018). Both reviews
264 highlight the importance of treatment duration, Akhtar and Barlow recommend 12 or more

265 sessions, although authors argue that more research is needed to compare individual with
266 group interventions (2018).
267

268 Research indicates there is a relationship between (self) compassion and (self) forgiveness.
269 Cleare and colleagues argue that the conceptualisations of self-compassion and self-
270 forgiveness contain shared components of acceptance and kindness towards the self, in the
271 context of one's flaws (2019). Their systematic review found that self-compassion and self-
272 forgiveness were significantly and negatively correlated with self-harm, suicide ideation or
273 attempt, although the strength of the relationship remains unclear. Results by Wu and
274 colleagues indicated that self-compassion was associated with forgiveness, and that both
275 were negatively associated with rumination and anger in a population of Chinese students
276 (2019). Neff and Pommier (2013) also found that self-compassion was significantly
277 associated with forgiveness of others. These results suggest the role of mindful meditation
278 in connecting compassion and forgiveness, which might be associated with the principles of
279 Buddhist meditation that underpin some psychological theories of compassion and
280 mindfulness (Condon et al., 2019). Neff and Pommier found that practitioners of Buddhist
281 meditation reported significantly higher levels of self-compassion, compassion for humanity
282 and forgiveness, compared with community adults or undergraduates. (2013). Results
283 suggest that compassion and forgiveness may be cultivated over the years, as stage of life
284 was found to significantly predict higher levels of self-compassion, compassion for humanity
285 and forgiveness (2013). Differences in forgiveness over stage of life might give credence to
286 the expression 'time heals all wounds' and research has indicated that both actual time and
287 the perception of more time having elapsed is associated with increased likelihood to

288 forgive interpersonal transgressions (Wohl & McGrath, 2007). It is also interesting to

289 consider the role of wisdom in understanding the relationship between (self) compassion

290 and (self) forgiveness. This may include the possible connection with Buddhist ideas that

291 wisdom develops through compassionate engagement with the world, whereby the

292 individual is more focused on alleviating the suffering of others and less preoccupied with

293 the self (Condon et al., 2019).

294

295 **Present Review**

296 There is increasing research into the psychological wellbeing of those who work in

297 emergency contexts, with a particular interest on what can be done to reduce the impact

298 for those who witness or are a part of trauma at work. A systematic review of compassion

299 fatigue for emergency, healthcare, and community staff was completed by Cocker and Joss,

300 in 2016. To this author's knowledge, no review has been completed which specifically looks

301 at the role of (self) compassion and or (self) forgiveness on specific mental health

302 experiences of depression, anxiety, and PTSD for those who work in emergency contexts.

303 Further, the systematic review on compassion fatigue included samples of mostly nursing

304 staff (Cocker & Joss, 2016). In addition, two systematic reviews on psychological

305 interventions for First Responders, including interventions for PTSD in First Responders

306 (Haugen et al., 2012) and then an updated review on psychological interventions for First

307 Responders (Alden et al., 2021) are limited by predominantly covering police populations,

308 which makes it challenging to draw conclusions for other ER. The impacts of the COVID-19

309 pandemic, and the demands on front-line staff has brought questions of clinical

310 psychology's role in staff support into sharper focus (Williamson et al., 2020). Research has

311 indicated the clinical utility of (self) compassion and (self) forgiveness for anxiety,

312 depression, and PTSD symptoms. Given this, alongside the research and policy interest in

313 understanding and better meeting the mental health needs of ER, it is timely to complete a

314 systematic review about the role of (self) compassion and (self) forgiveness on mental

315 health experiences of depression, anxiety, and PTSD for ER.

316

317

318 **Method**

319

320 This review aimed to address the following question: are forgiveness and compassion from

321 self and other associated with reduced depression, anxiety, and PTSD symptoms in ER? An a

322 priori systematic review protocol was submitted to Prospero

323 (https://www.crd.york.ac.uk/prospero/) on 29.03.22, registration number: CRD42022310395.

324 The inclusion and exclusion criteria used to identify relevant papers is described in Table 1

325 (below).

326

327 **Table 1**

328 *Inclusion and Exclusion Criteria*

	Inclusion	*Exclusion*
Population	Adults who worked in emergency contexts, including students who were currently on or had completed emergency placements. Contexts may include but are not limited to:	Studies which only used a military, veteran, social work, or prison staff population. Children or adolescents. Populations of individuals who had not received training to work in

	fire services, police, ambulance services, emergency medicine, community First Responders. Staff who were described to have worked on the 'front line' during the COVID-19 pandemic, including healthcare staff.	emergencies (such as members of the public who had responded to an emergency).
Intervention type	Either intervention or cross-sectional studies that explored (self) forgiveness and/or (self) compassion. Psychological interventions were included if the paper demonstrated that there was a significant component of the intervention that focused on (self) compassion and/or (self) forgiveness. Such as one compassion session in a mindfulness intervention.	Studies that looked at related predictors or outcomes only, such as compassion fatigue, burnout, moral injury, professional quality of life or self-condemnation.
Comparators	As the review included both intervention and cross-sectional designs, no specific comparators/controls were indicated. For example, for an intervention study, a compassion-focused intervention might have been compared with treatment as usual or a waitlist control. Cross sectional studies required a comparison of (self) compassion and/or (self) forgiveness with anxiety, depression, or PTSD symptoms.	No intervention studies were excluded based on comparators. Cross sectional studies were excluded if results did not report a quantitative comparison of (self) compassion and/or (self) forgiveness with anxiety, depression, or PTSD symptoms.
Outcomes	Symptoms of depression, anxiety, PTSD, measured quantitatively by either self-report measure or diagnostic interview schedule. No specific measures were required.	Related outcomes only, such as a measure of wellbeing or professional quality of life.
Type	Original research papers that reported quantitative data, either	Qualitative studies, systematic reviews, meta-analyses, single-case study designs, editorials, opinion

	published in peer-reviewed journals or available grey literature.	pieces or letters. Studies not available in English.

329

330 **Search Strategy**

331 As the review question explored psychological processes in emergency working, which may
332 include working in medical contexts, a decision was made to search both medical and
333 psychological databases. The electronic databases PubMed (1950 to present), MEDLINE with
334 Full Text (1946 to present), Web of Science (1970 to present), and APA PsycINFO (1800s to
335 present) were systematically searched in April 2022. No date restrictions were placed on the
336 search. Preliminary searches were initially conducted to refine the search strategy and to
337 ensure that proposed strategies yielded sufficiently relevant results. The following search
338 strategy was used for PsycINFO, Medline and PubMed:

339

340 (“first respond*” OR first-respond* OR fire* OR paramedic* OR police OR “emergency
341 worker” OR “emergency service*” OR EMS OR rescue OR “urgent care” OR “accident and
342 emergency” OR “intensive care unit” OR ICU OR frontline OR “front-line”) AND (compass*
343 OR “self compass*” OR self-compass* OR forgiv* OR “self forgiv*” OR self-forgiv*) AND
344 (depress* OR anx* OR stress OR PTSD OR “post-traumatic stress*”)

345

346 The search strategy was altered for Web of Science by searching by topic only, indicated by
347 ‘TS’ in the search strategy below:

348

349 TS=(“first respond*” OR first-respond* OR fire* OR paramedic* OR police OR “emergency
350 worker” OR “emergency service*” OR EMS OR rescue OR “urgent care” OR “accident and

351 emergency" OR "intensive care unit" OR ICU OR frontline OR "front-line") AND
352 TS=(compass* OR "self compass*" OR self-compass* OR forgiv* OR "self forgiv*" OR self-
353 forgiv*) AND TS=(depress* OR anx* OR stress OR PTSD OR "post-traumatic stress*")
354

355 **Study Selection and Procedure**

356 The output of each database search was uploaded onto the systematic reviewing platform
357 Rayyan (https://www.rayyan.ai/). Rayyan allowed the identification of duplicates by
358 providing information on percentage of similarity alongside a direct comparison of potential
359 duplicates citation and abstract. Rayyan also enabled each article to be coded with a reason
360 for inclusion or exclusion. In the first stage, duplicates were removed by the reviewer, and
361 no results were removed by automation. In the second stage, titles and abstracts of the
362 remaining studies were screened for relevance against the inclusion and exclusion criteria.
363 For each study excluded, a reason was coded. Common reasons for exclusion included: a)
364 wrong population, b) wrong study design, c) wrong process (not (self) compassion or (self)
365 forgiveness, d) wrong outcome (not symptoms of depression, anxiety, or PTSD). In the third
366 stage, the full text of the retained studies was reviewed against the inclusion and exclusion
367 criteria. A second reviewer assessed 20% of the full text studies using the screening tool
368 provided in Appendices. This process was completed independently, and discrepancies were
369 then resolved via consensus. In the final stage, a citation search was conducted using the
370 'cited by' function on Google scholar. The cited by results for included articles were then
371 screened against the inclusion and exclusion criteria. A citation search was then completed
372 for all new studies identified that met the inclusion criteria. This process aimed to reduce
373 the risk of publication bias by identifying grey literature and to enable the inclusion of pre-
374 publication articles.

Quality Assessment

The final studies to be included in the review were assessed for quality using The Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018). MMAT was used as it enables a quality assessment of studies with a variety of designs, whereas, by using different tools for different study designs, the results of the quality assessment may have reflected differences in the tools themselves, rather than differences in the quality of the studies. To reduce the risk of bias, two reviewers independently assessed the quality of all included studies. Any discrepancies in quality assessment were discussed and it was agreed in advance that the author's research supervisor would be asked to provide a final decision if an agreement could not be reached. Consistent with guidance on using MMAT (Hong et al., 2018), an overall quality score is not provided, instead each item is answered as a) yes, b) can't tell or c) no, and a summary of strengths and limitations are provided in the results. As the MMAT authors discourage reviewers from calculating an overall score, it was not possible to provide a statistic of agreement, such as Cohen's Kappa. Instead, the percentage of agreement across all items is presented. A low-quality assessment would not result in exclusion from the review; however, findings of the studies are considered in the context of the quality assessment in the discussion of results.

Plan for Data Extraction and Synthesis

Data was extracted by one reviewer into two tables, split into intervention (randomised and non-randomised) and cross-sectional designs. Tables provide data to compare heterogeneity and certainty of findings (including methodology, measures used, sample size, confidence intervals where available). Only results relevant to this review question

398 were extracted. Results were presented in a narrative synthesis informed by Synthesis
399 Without Meta-analysis (SWiM) reporting guidelines (Campbell et al, 2020). The narrative
400 synthesis grouped findings firstly by processes of (self) compassion and then (self)
401 forgiveness. The synthesis planned to further split into sub-groups of depression, anxiety,
402 and PTSD outcomes. However, given the limited number of studies, and the variability of
403 mental health outcomes used, a decision was made to instead group findings by cross
404 sectional and intervention study design, to provide better clarity to the reader. Findings with
405 most relevance to the review question and rated as the highest quality were prioritised in
406 the narrative synthesis.

407

408 **Results**

409

410 **Study Inclusion**

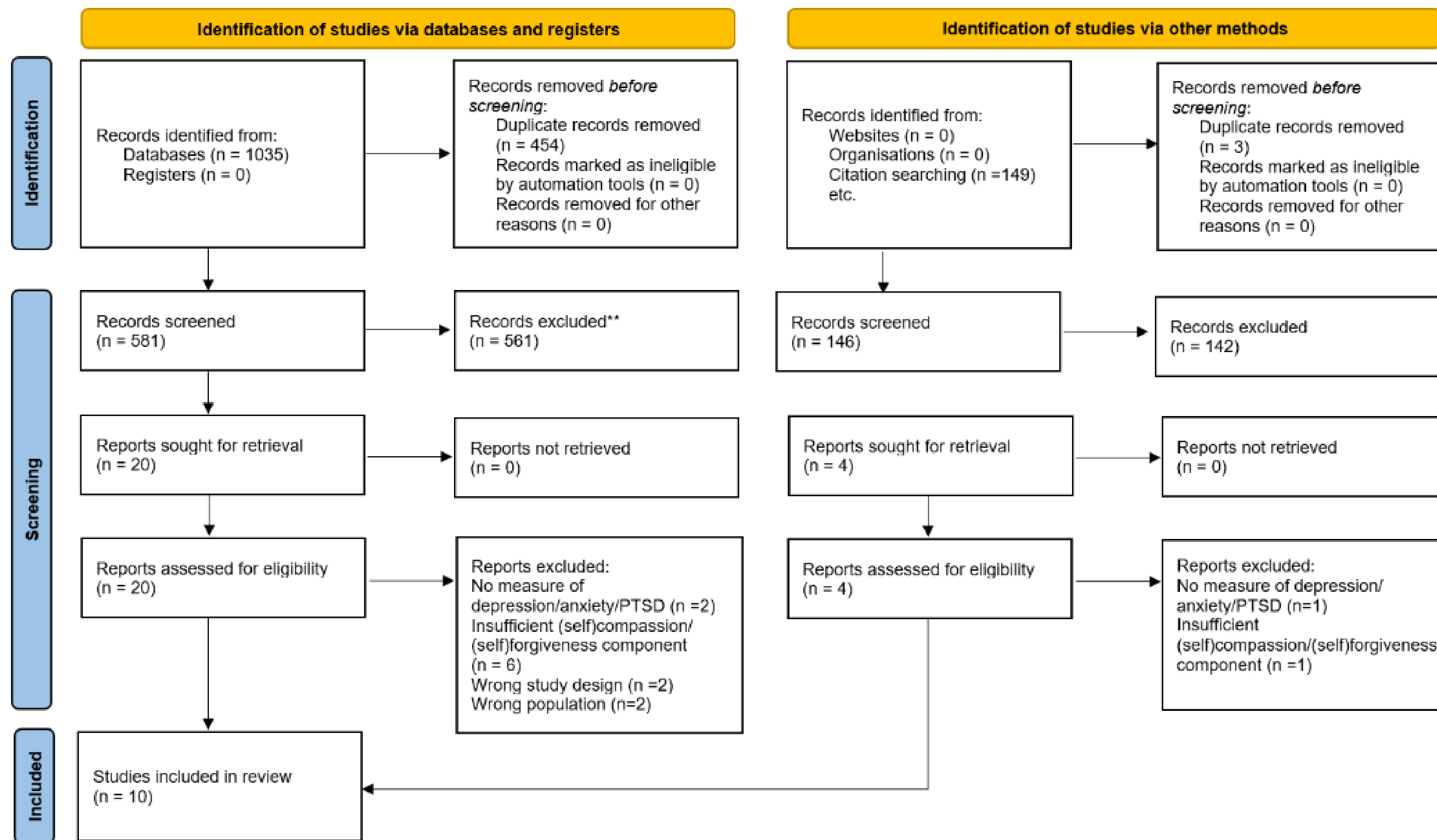
411 The study selection is shown in the PRISMA flow diagram (Page et al., 2020) diagram
412 obtained from: http://prisma-statement.org/prismastatement/flowdiagram.aspx see Figure
413 1 below. The database search resulted in 1035 results, reduced to 581 following the removal
414 of duplicates. Of these 581, 561 studies were excluded. The most common reason for
415 exclusion was a) wrong study design, for example qualitative study or review, followed by b)
416 unrelated outcome, meaning studies did not include a measure of depression, anxiety or
417 PTSD symptoms, followed by c) insufficient or no (self) compassion or (self) forgiveness
418 component, and finally d) wrong publication type or, e) wrong language. The results of 20
419 studies were sought for retrieval. Citation searching using Google Scholar's 'cited by'
420 function for these 20 studies resulted in 149 results. After three duplicates were removed,

421 146 results were screened, which resulted in 142 results being excluded. Finally, four results
422 were sought for retrieval. The full text of 24 studies was reviewed against the inclusion and
423 exclusion criteria. A second reviewer screened 20% of the full text studies (five papers)
424 against the inclusion and exclusion criteria, to support reliability. There were two
425 discrepancies in screening decisions, both regarding whether there was sufficient evidence
426 of compassion in the study. Both discrepancies were resolved through consensus. Screening
427 resulted in ten papers being included in the review.

428

Figure 1

PRISMA Flow Diagram



Characteristics of Included Studies

All studies were from peer-reviewed journals, published between 2016-2021. Three studies were conducted in the United States of America (USA), one study was conducted in Canada, one was conducted in both the USA and Canada, one study was conducted in Australia, one in Brazil, one in Germany, one in Israel and one in the United Kingdom (UK). Six cross-sectional and four intervention studies were included in the review. The data extracted from each study is provided in Table 2 for intervention studies and Table 3 for cross sectional studies. In accordance with SWiM guidelines (Campbell et al., 2020), a decision was made prior to data extraction to separate the studies into intervention and cross-sectional findings. The results of all studies regardless of quality are presented. The review has a total sample number of 1723 participants. Police and firefighters were the most represented professions of ER and mindfulness interventions were the most represented form of intervention. Eight studies in this review focused on (self) compassion and two studies focused on (self) forgiveness.

Methodological Quality

Two reviewers independently assessed the quality of the ten included studies using MMAT (Hong et al., 2018). Reviewers agreed on 71% of quality assessment items. The reviewers then discussed each discrepancy (n=20) in turn, both reviewers provided their rationale for their original rating and then reviewed the relevant parts of the paper together. All discrepancies were resolved via consensus and the involvement of the reviewer's supervisor was not required. The overall quality of studies was good. Most studies presented clear research findings that enabled them to address the identified research questions. Overall,

24 studies scored highly on their use of reliable and valid measures, with a lot of studies

25 included using the same measures, especially for self-compassion. Cross-sectional studies

26 were broadly limited by providing little or no information to compare their sample to the

27 target population, although one study did report on the over-representation of women in

28 their sample (Carpenter et al., 2019).

29

30 **Certainty of Findings**

31 The results of the current review should be interpreted in the context of potential

32 publication bias, as all studies were published in peer-reviewed journals. Further, all cross-

33 sectional studies relied on opportunity sampling, four out of six of which relied on social

34 media recruitment. This limits the sample to those who had access to the internet, and

35 people that engage with social media. Further, for each of these four studies, reports gave

36 little or no information comparing the sample to the target population, which impacts the

37 extent to which findings can be generalised.

Table 2

Summary of Intervention Studies

#	Study Details		Participants		Intervention			Review-specific measures	Review-specific findings	Study Quality
	Authors and date	*Location*	*Population*	*N = M F*	*Description of intervention*	*(self)compassion (self)forgiveness component*	*Follow up period*	*Measures*	*Results*	*Quality Assessment*
1	Beaumont et al., (2016)	UK	Firefighters with PTSD symptoms.	N = 17 12 M 5 F	N=9 received a combination of TF-CBT and CFT for up to 12 weeks. Treatment as Usual: N= 8 received TF-CBT only for 12 weeks.	CFT Psychoeducation, three systems model (Gilbert, 2010) compassion-focused thought records compassionate letter writing, connecting with a compassionate self.	Pre and post therapy	Hospital Anxiety and Depression Scale (Snaith & Zigmond, 1994) The Impact of Events Scale – Revised (Horowitz et al., 1979; Weiss & Marmar, 1996) The Self-Compassion Scale (SCS) – Short Form (Raes et al., 2011)	Both groups had significant reduction post-therapy in PTSD intrusion, avoidance, and hyperarousal symptoms, as well as anxiety and depression. Effect size (measured by partial eta squared) reported as 'high' but no reported statistic was identified. Adding CFT as an adjunct to TF-CBT did not significantly improve outcomes in trauma related or depression symptoms.	***Strengths:*** Reliable, valid measures, no missing data. Interventions were clearly defined. ***Limitations:*** Small sample number, findings limited to firefighters referred to therapy. No information provided on the referral process and no discussion of confounders.
2	Grupe et al., (2021)	USA	Police	N = 114 67 M 47 F	(RCT) mindfulness intervention N = 57 or wait-list control N = 57	Session 6: Compassion, resilience and mindfulness including compassion practises.	Baseline, N =114, Post intervention, N =110 3 month follow up N =105	PTSD Checklist for DSM-5 (Weathers et al., 2013) Patient-Reported Outcomes Measurement Information System (PROMIS subscales of:	Reduced distress and mental health symptoms following mindfulness training relative to waitlist control, controlling for baseline symptoms, cohort, gender, and years of policing (eta squared = .09) Significantly improved mental health and reduced distress	***Strengths:*** Randomisation was explained clearly. Outcome data were complete. Excellent adherence to the treatment. ***Limitations:*** Insufficient

								anxiety, depression, fatigue, sleep disturbances, ability to participate in social roles and activities, physical function, pain interference, and pain intensity) (reference not provided by the article).	were observed immediately after the 8-week training (Cohen’s d = -.45) and at 3-month follow-up (Cohen’s d = -.41). Significant Group X Time interactions (uncorrected for multiple comparisons) for the PTSD Checklist, PROMIS-anxiety, and significant group differences at 3-month follow-up only for the Perceived Stress Scale and PROMIS-depression.	information provided on blinding. Demographic differences between groups were compared in a table but not explored in text.
3	Knobloch & Owens (2021)	USA	First Responders and family members. N = 93 people with First Responder trauma. N = 7 people with other trauma. N = 24 attending as a family member.	N = 124 63 M 61 F	12 session peer-led, Christian-based spiritual care program. Five core values: finding purpose in pain, valuing family, cultivating trust, facilitating fellowship, and encouraging service. 30 groups met face to face and 8 met virtually. 36 courses were 12 weeks in length, 2 met for a 2-day format.	Forgiving yourself and others was one out of 12 components of the programme curriculum.	Measures at 3rd and 12th session.	Patient-Reported Outcomes Measurement Information System (PROMIS-29, v2.0) (specific reference not provided by the article).	There were significant differences at week 12 compared with week 3 in anxiety (Cohen’s d = .52) and depression Cohen’s d = .62). Results remained significant for a sub-population of people who had experienced First Responder trauma (n=93) for both anxiety (unstandardised coefficient = -1.42) and depression symptoms (unstandardised coefficient = -2.04).	***Strengths:*** The researchers used appropriate measures. ***Limitations:*** Only evaluated the treatment effectiveness for those already invested in the programme, some who had completed it multiple times. Insufficient information provided on possible missing data or confounders. The intervention appears to have taken place as intended but little information was provided on this.

					Groups size ranged from 1 – 11.					
4	Trombka et al., (2021)	Brazil	Civil Police Civil Guard	N =170 43 M 127 F	Two-armed RCT 8-week mindfulness-based intervention entitled: Mindfulness-Based Health Promotion (MBHP) completed by N = 66, or waitlist control, N = 62.	Session 7: ‘Mindfulness and Compassion’ didactive teaching on defining compassion and the biological basis of compassion. Ways of training compassion, fear of compassion in western society, loving kindness practice (for self and for others). Homework on attention for self-compassion in routine activity.	Baseline N = 170 2 weeks post-intervention N = 128 6 month follow up N = 121	Hospital Anxiety and Depression Scale (HADS) 14-item, (Snaith & Zigmond, 1994)	Statistically significant differences between groups were found at post and 6-month follow-up, showing lower scores in the MBHP group compared with the waitlist group for both depression (Cohen’s d = −.60 95% CI = −0.97, −.24) and anxiety subscales (Cohen’s d = −.51 95% CI = −.87, −.15). When considering the MBHP group, 16 and 29 responses were above HADS-D and HADS-A cut-off scores at pre-intervention, and 3 and 8 at post-intervention, respectively.	***Strengths:*** Groups were comparable at baseline Assessors were blinded to intervention groups. ***Limitations:*** Limited information was provided on the randomisation process. There was a greater than 20% loss of data at follow up compared to baseline. Information on treatment adherence was limited.

Note. Acronyms in the order they are presented: UK = United Kingdom, PTSD = Post Traumatic Stress Disorder, N = number of participants, M = number of men, F = number of women, TF-CBT = Trauma Focused CBT, CFT = Compassion Focused Therapy, RCT = Randomised Control Trial, CI = Confidence Interval, USA = United States of America, DSM-V = Diagnostic and Statistical Manual of Mental Disorders Fifth Edition

Table 3

Summary of Cross-Sectional Studies

#	Study Details		Participants and Design			Review-Specific Measures	Review-Specific Finings	Study Quality
	Authors and date	Country	Participants	N = M F	Recruitment Method	Measures	Summary of Results	Quality Assessment
5	Carpenter et al., (2019)	USA and Canada	Professional Firefighters	N = 72 The authors state: "approximately 86% of the sample was male" *on this basis assume 62 M 10 F*	Participants self-selected from those who attended a voluntary stigma reduction workshop. Participants completed paper-and-pencil self-report assessments.	Self-forgiveness was assessed using the self-forgiveness component of the Heartland Forgiveness Scale, 6 item (Thompson et al., 2005) Beck Depression Inventory for Primary Care, 7 item (Beck et al., 1997) The Post-Traumatic Stress Disorder Checklist for DSM–5, 20 item (Weathers et al., 2013)	Self-forgiveness significantly predicted PCL scores, (standardised Beta = -.50, CI = -.71, -.29). Self-forgiveness predicted BDI scores (standardised Beta = -.55, CI = -.76, -.34).	***Strengths:*** Low risk of non-response bias. The psychometric properties of each measure were discussed. The analysis was appropriate to address the research aims. ***Limitations:*** Data was gathered from a population already interested in stigma. Only a limited attempt was made to compare the sample with the target population.
6	Fleischmann et al., (2021)	Canada	Police	N = 130 84 M 46 F	Recruited via email, Facebook, and Twitter to complete an online self-report survey.	The Self-Compassion Scale-Short Form, 12 item (Raes et al., 2011) The Depression Anxiety Stress Scale, 21 item (Lovibond & Lovibond, 1995)	Significant negative Pearson's correlations between self-compassion, anxiety (r = -.47) and depression symptoms (r = -.65). Self-compassion did not moderate the relationship between operational stress with anxiety (Beta coefficient = -	***Strengths:*** Recruitment via several online methods. The psychometric properties of each measure were discussed, the analysis was appropriate. ***Limitations:*** Limited information provided

							.01, CI = −.01, .00) or depression (Beta coefficient = .00, CI = −.01, .00). Nor did self-compassion moderate the relationship between organizational stress with anxiety (Beta coefficient = -.00, CI = −.01, .00) or depression symptoms (Beta coefficient = -.00, CI = −.01, .00).	comparing the sample to the target population. Little information was provided regarding non-response bias.
7	Harnett et al., (2021)	Australi a	Police	N = 506 258 M 248 F	Recruited through a national social media campaign conducted by a registered charity that provides peer support services to current and former police officers and their families from around Australia.	The Self-Compassion Scale-Short Form. 21 item (Raes et al., 2011) Depression, Anxiety, and Stress Scale, 21 item (Lovibond & Lovibond, 1995) The Posttraumatic Stress Disorder Checklist for DSM-5, 20 item (Weathers et al., 2013)	There was a significant negative correlation between PTSD and self-compassion (r = -.50) and psychological distress and self-compassion (r = -.55). Higher levels of PTSD were associated with higher levels of psychological distress (r = .84).	***Strengths:*** An appropriate sampling strategy was used. The psychometric properties of each measure were explored. The analysis was appropriate. ***Limitations:*** No information was provided to compare the sample to the target population. No information was provided to assess the risk of non-response bias.
8	Kaurin et al., (2018)	Germa ny	Firefighters	N =123 123 M 0 F	Recruited from one fire brigade in a major city in Germany (Mainz) and all belonged to the same unit.	The validated German translation of the Self Compassion Scale, (Hupfeld & Ruffieux, 2011) German version of the patient Health Questionnaire, 9 item (Kocalevent et al., 2013) Posttraumatic Diagnostic Scale (Foa et al., 1997)	The correlation between self-compassion and depression was weak (r = -.13), as was self-compassion and cumulative potentially traumatic events (PTE) exposure (r = .10). There was a significant three-way interaction between self-compassion, self-criticism and cumulative PTE exposure (beta = -1.34), indicating that the relationship between self-criticism	***Strengths:*** Low risk of non-response bias. The psychometric properties of each measure were discussed. The analysis is appropriate to address the research aims. ***Limitations:*** The sample was recruited from one fire station in Germany, little information was provided to compare

							and depression symptoms was mitigated by self-compassion but only when the cumulative exposure to potentially traumatic events was above average.	with the wider target population. Little information about the fire station to allow readers to identify points of similarity and difference to other contexts.
9	McDonald et al., (2021)	USA	Traditional First Responders including Law enforcement, Fire, Emergency Medical services (N = 140) Emotional support First Responders (N =31)	N = 171 125 M 46 F	Participants recruited via mass emails and data collected on Qualtrics.	The Self-Compassion Scale – Short Form, 12 item (Raes et al., 2011) The Santa Clara Brief Compassion Scale (SCBCS) – 5 item (Hwang et al., 2008) The Depression, Anxiety, and Stress Scale, 21 item (Lovibond & Lovibond, 1995) The PTSD Checklist for DSM-5, 20 item (Weathers et al., 2013)	Greater self-compassion predicted lower levels of psychological distress (Beta coefficient = -.51). Greater self-compassion predicted lower levels of PTSD symptoms (Beta coefficient = -.49). Compassionate love was not a significant predictor of lower levels of psychological distress (Beta coefficient = .00) or PTSD (Beta coefficient = .06).	***Strengths:*** Opportunity sample of different First Responders, including support First Responders. There was a low risk of non-response bias. Analysis was appropriate for the research question. ***Limitations:*** Little information was provided to indicate if the sample were representative of the target population. Whilst the reliability and validity of the majority of measures is discussed, this is not provided for every measure.
10	Zerach & Levi-Belz (2021)	Israel	Frontline health and social care workers	N = 296 66 M 228 F (gender for 2 particip ants not accoun	Recruited via email and Facebook between February 1st and March 15th 2021, which represents the post-peak of the third COVID-19 wave in Israel.	The patient health questionnaire, 9 item (PHQ-9, Kroenke et al., 2001) The generalized anxiety disorder 7 item, (GAD-7, Spitzer et al., 2006) Global mental health, 6 item (Kessler et al., 2010)	Bivariate associations indicate negative relationships between self-compassion with PTSD (r =-.29) depression (r = -.48) and anxiety symptoms (r = -.54). Within the latent class analysis three classes were labelled 'minimal exposure' 'betrayal only' and 'high exposure'.	***Strengths:*** The sampling method was appropriate. The psychometric properties of the measures were explored. ***Limitations:*** No information was provided to compare the sample to the target population.

	ted for by the article)	International Trauma Questionnaire for PTSD, 12 item (Cloitre et al., 2018) Self-compassion scale–short form, 12 item (Raes et al. 2011)	Those in the high exposure reported significantly higher depressive, anxiety and PTSD symptoms compared with the other two groups (partial eta squared = .16). Those in the high exposure class reported significantly lower levels of self-compassion than those in the minimal exposure class (partial eta squared = .04).	No information was provided to assess risk of non-response bias. Whilst latent class analysis is described clearly little information was provided to provide a rationale for why they chose latent class analysis.

Note. Acronyms in the order they are presented: USA = United States of America, N = number of participants, M = number of men, F = number of women, PTSD = Post Traumatic Stress Disorder, DSM-V = Diagnostic and Statistical Manual of Mental Disorders Fifth Edition, CI = Confidence Intervals.

38 **Review Findings**

39

40 ***(Self) Compassion***

41 **Cross-sectional findings**.

42 Results indicated that there is a negative association between self-compassion, anxiety,
43 depression, and PTSD symptoms for ER. There were four cross-sectional studies that
44 included a measure of self-compassion and one cross-sectional study that included a
45 measure of self-compassion and compassion. Extracted data suggests that there is a
46 negative association between self-reported self-compassion and self-reported symptoms of
47 anxiety, depression and PTSD for police and front-line health and social care workers
48 (Fleischmann et al., 2021, Harnett et al., 2021, and Zerach & Levi-Belz, 2021). Results from
49 Kaurin and colleagues (2018) found weak associations between self-compassion and
50 depression for firefighters, however their results found a significant three-way interaction
51 between self-compassion, self-criticism and cumulative exposure to potentially traumatic
52 events. The authors propose that the relationship between self-criticism and depression
53 symptoms was mitigated by self-compassion but only when the cumulative exposure to
54 potentially traumatic events was above average. However, the quality of Kaurin et al.'s
55 findings are limited because of recruiting from only men in one brigade in Germany. As
56 authors give little contextual detail about the specific brigade targeted, it is difficult for
57 readers to effectively consider how this might relate to different contexts. Greater self-
58 compassion was associated with lower levels of psychological distress and PTSD symptoms
59 for traditional and support-First Responders. Results from Harnett et al., (2021) indicate that
60 reported PTSD symptoms are associated with anxiety and depression symptoms as well as

lower levels of self-compassion. One cross-sectional study investigated the role of compassion for others (McDonald et al., 2021) and results indicate that compassion was not significantly associated with lower levels of psychological distress or PTSD. This finding should be interpreted with caution; although the study had a reasonable sample size (n = 171) of a variety of First Responders, the quality of results is impacted as authors provide little comparison of their sample with the target population. The level of exposure may be an important factor in understanding the relationship between self-compassion and mental health symptoms. Results of Zerach & Levi-Belz (2021) indicate that front-line health and social care workers within the high-exposure class reported significantly higher depression, anxiety and PTSD symptoms and lower self-compassion when compared with the 'low exposure' and 'betrayal only' groups. This may indicate that ER with higher exposure might require more intensive psychological interventions, such as those with a longer treatment duration. In addition, it would be helpful for researchers to evaluate the effectiveness of interventions across ER with varied levels of exposure. Results from Harnett et al., (2021) indicate that the relationship between self-criticism and depression symptoms may be mitigated by self-compassion but only when the cumulative exposure to potentially traumatic events was above average. Whilst several cross-sectional studies have demonstrated a relationship between self-compassion and mental health symptoms, with four studies reporting moderate effect sizes for depression and anxiety, conclusions regarding cause and effect are beyond the scope of these results. Thus, it is unclear if low self-compassion is a consequence of mental health difficulties, or if low self-compassion may make individuals more vulnerable to mental health difficulties.

84

85 **Intervention Findings**.

86 Of the four intervention studies that met inclusion criteria, one specifically focused on the
87 process of compassion, comparing Compassion Focused Therapy (CFT) and Trauma Focused
88 Cognitive Behavioural Therapy (TF-CBT) with TF-CBT only for trauma-exposed firefighters
89 (Beaumont et al., 2016). TF-CBT (Ehlers & Clark, 2000) is a NICE-recommended treatment
90 for PTSD in adults (NICE, 2018), which uses an exposure approach alongside evaluating key
91 appraisals. CFT (Gilbert, 2010) is a third wave cognitive therapy that aims to help people
92 regulate and balance their internal threat, drive, and soothing systems, practising
93 compassion towards the self and towards others, with a strong imagery component (Gilbert,
94 2010). Adding CFT as an adjunct to TF-CBT did not significantly improve outcomes in
95 trauma-related or depression symptoms. Although not relevant for the data extraction for
96 this review, authors did find that those in the combined therapy group had significant higher
97 self-compassion scores post intervention. There was evidence of a numerical trend that
98 favoured the CFT group and results are limited by a small sample size of 17. Therefore, it is
99 possible that the lack of significant results is due to the study having insufficient statistical
100 power to detect an effect. Trombka et al. (2021) and Grupe et al. (2021) looked at the
101 impact of mindfulness interventions for police. Both studies included one session that
102 focused on compassion education and practices. Trombka et al. (2021) states that
103 compassion interventions involve both self- and other-focused compassion, however, it was
104 not possible to ascertain from the paper by Grupe and colleagues (2021) if practices were
105 focused on self-compassion or compassion for others, or both. Results indicated that
106 mindfulness interventions significantly reduced depression and anxiety symptoms post
107 intervention, retained at six month follow up (Trombka et al., 2021) and some PTSD

108 symptoms at three month follow up (Grupe et al., 2021). However, as compassion was only

109 one component of interventions, it is difficult to determine if the process of compassion

110 itself reduced anxiety, depression, and PTSD scores for ER. In addition, the results of

111 Trombka and colleagues (2021) need to be considered in the context of a greater than 20%

112 loss of data at six month follow up. The authors do not provide details of the differences in

113 demographic characteristics between the baseline and follow-up sample. This may provide

114 important information regarding clinical implications, for example are male police officers,

115 or those with increased mental health symptoms at baseline, less likely to engage in follow

116 up? Further, in Beaumont and colleagues' study (2016), CFT is not evaluated as an individual

117 intervention, but as an adjunct to TF-CBT. This review, therefore, cannot comment on the

118 exclusive role of (self) compassion. Results indicate that processes of (self) compassion

119 contribute to improved depression, anxiety and PTSD symptoms for firefighters and police,

120 when delivered in conjunction with mindfulness, and TF-CBT.

121

122 ***(Self) Forgiveness***

123 Two studies focused on (self) forgiveness, one cross-sectional study (Carpenter et al., 2019)

124 and one intervention study (Knobloch & Owens 2021). Cross-sectional findings indicate that

125 those who reported higher levels of depressive symptoms and PTSD symptoms reported

126 lower levels of self-forgiveness. This review did not find any intervention study that

127 exclusively looked at (self) forgiveness interventions. Knobloch and Owens (2021) included

128 'forgiving yourself and others' as one out of 12 components of a Christian-informed peer

129 intervention for First Responders and their families. A significant reduction in depression

130 and anxiety scores at 12 weeks was observed compared to depression and anxiety scores at

131 three weeks. Results remained significant when reviewing a sub-sample of individuals who
132 had experienced first-responder trauma. No available information on the components of
133 (self) forgiveness interventions on symptoms of PTSD and no longer-term follow up was
134 completed to indicate whether these findings were maintained over time. The quality of
135 results extracted on (self) forgiveness are limited by the specific samples used. Carpenter
136 and colleagues (2019) recruited from a pool of people who already expressed an interest in
137 stigma and Knobloch and Owens (2021) recruited from First Responders and their family
138 members who had already signed up and started to attend the faith-based peer support
139 intervention, some of whom had already completed the programme in the past. It is
140 therefore difficult to draw conclusions based on the data available about the role of (self)
141 forgiveness on mental health symptoms for ER.

142

143 **Discussion**

144

145 At the time of writing, this was the first systematic review to address whether compassion
146 and forgiveness towards self or other are associated with reduced depression, anxiety, and
147 PTSD symptoms in ER. Ten studies met the inclusion criteria, of which four were
148 intervention studies and six cross-sectional studies. Eight studies provided data on (self)
149 compassion, and two studies provided data on (self) forgiveness related to the identified
150 outcomes of anxiety, depression, and PTSD symptoms. Experiences of anxiety, depression
151 and PTSD have been found to be higher in ER compared with the general population (Jones,
152 2017). Being involved in complex emergency situations, where uncertainty is high, and time
153 is limited might result in emotions of guilt, shame, blame, or anger. Self-conscious emotions

154 of guilt and shame have been found to be associated with symptoms of anxiety and
155 depression (Cândea & Szentagotai-Tătar, 2018) and PTSD (Cunningham, 2020). This review
156 provides some promising early indication that compassion and forgiveness towards self and
157 others may be key processes in understanding ER's experience of depression, anxiety, and
158 PTSD symptoms.

159

160

161 **(Self) Compassion Alone?**

162 Three cross-sectional studies indicated that higher self-compassion was associated with
163 reduced mental health symptoms. Mindfulness interventions with a self (compassion)
164 component resulted in significant differences in anxiety, depression, and PTSD scores both
165 post intervention and at follow ups. As processes of (self) compassion made up only part of
166 these interventions, it is difficult to ascertain the extent to which reductions in mental
167 health symptoms were due to (self) compassion practises alone. However, results do
168 suggest that (self) compassion when delivered as part of a mindfulness intervention can
169 lead to a reduction in reported anxiety, depression and PTSD symptoms compared with
170 wait-list controls. Further, research has argued that compassion has a fundamental role in
171 the efficacy of mindfulness-based interventions in increasing psychological well-being (Baer,
172 et al., 2012). It is important to note that both mindfulness intervention studies that met
173 inclusion for this review compared their intervention to wait-list controls. As interventions
174 were not compared with an alternative treatment, it raises the question if results are due to
175 the specific interventions trialled or other non-specific effects, such as participants
176 expecting to feel better, or the impact of having the support and attention of the therapist
177 or the group. Further, the two mindfulness-based interventions were with a population of

178 police only, so may not generalise to other ER. Only one study had a specific compassion-
179 focused intervention, exploring CFT as an adjunct to TF-CBT for trauma-exposed firefighters.
180 This has the advantage that both groups received an intervention and therefore reduces the
181 bias of non-specific therapeutic gains. The results of this study did not find a significant
182 difference between TF-CBT with CFT and TF-CBT alone. However, numerical trends did
183 indicate the superiority of the combined intervention which may have become significant
184 with a bigger sample size.

185

186 Eight studies investigated self-compassion; one cross-sectional study used a measure of
187 compassion in addition to self-compassion. Two out of the three (self) compassion
188 intervention studies explicitly stated that the intervention included self-compassion and
189 compassion practices. It is therefore difficult to unpick the relationship between self-
190 compassion and compassion. It has been argued that interpersonal compassion is optimised
191 in individuals who are able to first show compassion to themselves (Sinclair et al., 2017). As
192 the self-compassion literature talks about the importance of accepting negative feeling
193 states as they are, rather than trying to change them or push them away (Sinclair et al.,
194 2017) this raises the question if focusing on symptom outcomes may fail to effectively
195 explore people's relationship with their emotions. Exposure to potentially traumatic events
196 will likely come with anxiety, sadness, and fear but do mental health measures tell us
197 enough about the role of self-compassion and self-forgiveness in not changing the presence
198 of the symptoms but changing the relationship with the symptoms? There might be utility in
199 measuring acceptance, avoidance, or emotional regulation instead of mental health
200 symptoms. On the other hand, one may expect that when an individual is more accepting of
201 their emotional states, that this results in less distress which would be effectively captured

202 by some mental health symptom measures, including some of those used in this review. For
203 example, the PHQ-9, which includes nine questions based on the DSM-IV symptom criteria
204 for Major Depressive Disorder and asks about the impact of low mood, including difficulty
205 with sleeping, eating, concentrating as well as difficulties with feelings of guilt and self-
206 esteem (Kroenke et al., 2001).

207

208 **(Self) Forgiveness: Does Time Heal?**

209 The results regarding (self) forgiveness are limited. The quality of both studies is limited by
210 the recruitment of people who were already invested in either a workshop on stigma or
211 who had already signed up for the peer-intervention programme. The cross-sectional study
212 focused on self-forgiveness only and results indicate an association between depression and
213 PTSD symptoms and low scores of self-forgiveness in a sample of professional firefighters.
214 One intervention study explored forgiveness for self and other, as one component of a faith-
215 based peer support intervention. The impact of time and duration is an interesting
216 consideration for (self) forgiveness. Two separate meta-analyses on forgiveness for others
217 discuss the importance of treatment duration for the effectiveness of forgiveness therapy
218 (Wade et al., 2014; Akhtar & Barlow 2018) with the second recommending that
219 interventions are at least 12 sessions in duration (Akhtar & Barlow, 2018). Further, previous
220 cross-sectional research identified a significant relationship between age and trait
221 forgiveness, where older people had higher trait forgiveness ratings (Tenklova & Slezackova,
222 2016). Stage of life was also found to lead to significant differences in self-compassion,
223 compassion for humanity and forgiveness between undergraduates, community adults and
224 Buddhist meditators (Neff & Pommier, 2013). Given the importance of treatment duration

225 and of age to forgiveness, it is interesting to consider if the more distance an individual gets
226 from a potential source of hurt increases their likelihood to be forgiving, in the spirit of the
227 expression: ‘time heals all wounds’. This is especially important to consider given that ER’s
228 exposure to potential harms is ongoing, as they are expected to put themselves ‘in harm’s
229 way’ again in their next shift. It may be helpful to consider this alongside the dose-effect for
230 trauma (Hamby et al., 2021) whereby exposure to multiple traumas can result in more
231 complex presentations of PTSD (Winders et al., 2020). Therefore the (self) forgiveness
232 evidence base developed for other populations, such as those who experienced a singular
233 harm or offence, or veterans who have now finished working in conflict situations may not
234 effectively translate to the experience of (self) forgiveness for ER. Perhaps this is a
235 worthwhile consideration for (self) compassion for ER as well, a systematic review by Lou
236 and colleagues found that longer compassion interventions were associated with better
237 PTSD outcomes (2021). Due to the specific context of ER working demands, it is therefore
238 key that more research is completed for specific ER populations.
239

240 **Strengths and Limitations**

241 The results of this review must be interpreted within the context of the following
242 limitations. This review only provides data from a small number of studies. Of the four
243 intervention studies that met criteria, none of these interventions focused on (self)
244 compassion or (self) forgiveness in isolation, but as a component of a wider intervention,
245 such as mindfulness, or using CFT as an adjunct to TF-CBT. Based on the available data it is
246 not possible to conclude whether (self) compassion or (self) forgiveness interventions
247 reduce anxiety, depression, or PTSD symptoms. However, this review provides evidence that
248 self-compassion may contribute to improved mental health symptoms for police and

249 firefighters when combined with mindfulness and TF-CBT. Intervention findings from this
250 review must be interpreted with caution as three of the four intervention studies did not
251 involve comparing the intervention of interest with an alternative intervention. Previous
252 systematic reviews for First Responders have acknowledged that their findings were limited
253 by samples that are majority police (Alden et al., 2021, Haugen et al., 2012). This review in
254 contrast samples from a wider range of ER and included the experience of health and social
255 care staff during the COVID-19 pandemic (Zerach & Levi-Belz, 2021). However, some
256 samples are complicated by containing First Responder and emotional support responders
257 or family members. Heterogeneity of findings are limited by the specific demands of ER in
258 different countries. For example, gun ownership laws in the USA might result in different
259 kinds of exposure for USA-based ER. The specific context of the National Health Service
260 (NHS) both as a place that ER work within, but also a place where ER might seek
261 psychological support might provide additional barriers to ER seeking support, and thus may
262 also threaten the heterogeneity of the findings. Studies scored highly on their use of reliable
263 and valid measurements, and there was overlap of measures across studies. Further,
264 measures aligned well with those used in clinical practice, such as the PHQ-9 and GAD-7.
265 This speaks to the quality of the research and the authority of this review to comment on
266 self-compassion, using an accepted reliable and valid definition (as defined by the Self-
267 Compassion scale, short-from used in five included studies). On the other hand, the
268 dominant use of one measurement of self-compassion might limit the generalisability of
269 findings, whereby conclusions can only extend to self-compassion as effectively captured by
270 this metric. Conceptually, it is worth considering if mental health symptoms are the most
271 appropriate outcomes. Given the moral and self-conscious components of self-compassion
272 and self-forgiveness, perhaps their impact is better captured by measures of shame, guilt, or

273 moral injury. To add to this, perhaps the impact of compassion and forgiveness for others
274 are better measured by relational outcomes, such as the impact on social isolation, trust, or
275 loneliness. The quality of studies was assessed by the MMAT (Hong et al., 2018). The
276 advantage of using one quality assessment tool for multiple study designs is that differences
277 in quality assessment are not influenced by the differences in the quality appraisal tool.
278 However, the MMAT is a relatively brief measure of quality, asking seven questions for each
279 study, whereby different study types are assessed by different questions. Further, MMAT
280 does not provide an overall numerical score of study quality which might mean it is more
281 challenging for readers to quickly compare the differences in quality between studies.
282 Given the limited number of studies that met inclusion criteria for this review and how
283 recently published the results were, this brings into question whether it was too soon to
284 complete a systematic review on this topic. On the other hand, the results of this review are
285 informed by up to date and overall good quality research, which provide interested
286 researchers and clinicians a summary of the current research landscape, and this reviewer
287 hopes, helpful indicators about what is currently missing and therefore informed
288 recommendations about where next.

289

290 **Clinical Implications**

291 Results of this review provide early evidence to indicate that interventions with a (self)
292 compassion and (self) forgiveness component might have clinical utility for ER experiencing
293 symptoms of anxiety, depression and PTSD symptoms. Specifically, self-compassion may be
294 a helpful contributor to interventions for police and firefighters, when combined with TF-
295 CBT and mindfulness. Three out of the four interventions investigated in this review took

296 place in a group format, with only one intervention study involving individual therapy
297 sessions. The only intervention to specifically include forgiving self and others as part of the
298 programme, was also peer-led. It is interesting to consider the value of group-based and
299 peer-led interventions for ER, especially considering specific barriers to help seeking may
300 exist for ER, for example expectations for ER to be self-reliant, which may contribute to self-
301 stigma (Kaurin et al., 2018). Linked to this, in a review of qualitative studies of psychological
302 distress in ambulance personnel, results suggested that barriers to help seeking may include
303 stigma, isolation, alongside a military-like culture that discourages expressions of emotional
304 distress and poor return to work mechanisms (Lawn et al., 2020). In addition, results
305 suggested that for ambulance workers, psychological distress does not just result from the
306 exposure to potentially traumatic events but also from organisational factors, such as
307 concerns about sufficient confidentiality and the way managers respond to distress (Lawn et
308 al., 2020). This raises the question if psychologically informed approaches need to extend
309 beyond individual therapy and may also need to consider what facilitates a compassionate
310 and forgiving organisational culture, especially considering the high stakes that ER operate
311 within.

312

313 **Research Implications**

314 This review provides a summary of what is known so far in a clinically useful and emerging
315 research area. As few studies regarding (self) forgiveness have emerged from this review, it
316 would be of benefit for future research to investigate the contributions of forgiveness and
317 self-forgiveness with ER. None of the studies included in this review explored both (self)
318 compassion and (self) forgiveness. Although emerging from different psychological theories,

319 (self) compassion and (self) forgiveness have important conceptual similarities, especially
320 regarding acceptance and kindness in the context of mistakes or transgressions which may
321 be especially important for those who work in emergency contexts. Therefore, more
322 research is needed to understand the similarities, differences, and the relationship between
323 (self) compassion and (self) forgiveness. Future research is also needed which investigates
324 (self) compassion or (self) forgiveness interventions compared with alternative
325 recommended treatments, such as TF-CBT for ER. Given the expectations for ER to regularly
326 return to potentially traumatic situations, the dose-response effect of trauma and the
327 potential influence of time specifically for forgiveness interventions, future study designs
328 should include a long term follow up to interventions, for example six- or 12-months post
329 intervention to determine whether treatment gains can be maintained in the context of
330 further exposure (Alden et al., 2021). Given the mixed findings of this review, the evidence
331 base would benefit from longitudinal research that investigates the impact of repeated
332 exposure to potentially traumatic events, mental health and (self) compassion and (self)
333 forgiveness over time. It is interesting to consider whether exposure over the years makes it
334 harder for ER to treat themselves and treat others with forgiveness and compassion,
335 perhaps a consequence of emotional exhaustion or blunted empathy. Or if on the other
336 hand, measured over a long enough time (self) compassion and (self) forgiveness are
337 increased, possibly linked with post-traumatic growth. This raises a question about how ER
338 should balance the need to connect and the need to find distance in their roles. Distance
339 that might result from time, wisdom or mindfulness practices may be protective, however
340 distance without connection may become unhelpful, potentially linked with apathy or
341 burnout (Adriaenssens et al., 2015). This connects with what Condon (2019) discusses about
342 the importance of integrating both wisdom (mindful distance) and compassion. Because of

343 the unique working contexts of ER, the specific challenges that may arise from the work,
344 there is need to develop an ER specific evidence base that doesn't generalise from
345 experiences from other groups. Future qualitative studies or research designs that enable an
346 exploration of ER's experiences is needed, to understand from the perspective of ER the
347 impacts of the work as well as what will enable psychological support to be meaningful and
348 accessible.
349

350

351 **Conclusion**

352 This review provides promising early insights into the contributions of (self) compassion for
353 helping ER experiencing anxiety, depression, and PTSD symptoms. Higher self-compassion is
354 associated with lower depression, anxiety, and PTSD scores. A key strength of (self)
355 compassion and (self) forgiveness is the application to a variety of intervention types to
356 meet different ER's needs and preferences, including mindfulness, CFT and faith-based
357 interventions. However, more research is needed to understand if interventions that focus
358 exclusively on (self) compassion and (self) forgiveness reduce mental health symptoms, or if
359 these processes are instead key contributors alongside other mechanisms, such as
360 mindfulness. Given ER's unique working environment and the challenges that they face, it is
361 crucial that researchers, clinicians, and policy makers do not make assumptions and attempt
362 to generalise from literature from other groups, such as veterans or non-ER groups.

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Chapter 2

Empirical Paper

Exploring the Concept of Moral Injury with Emergency Responders

The Empirical Paper has been prepared in anticipation of submission to The Journal of Traumatic Stress. Author guidelines are included in Appendix 8 for examination purposes.

Abstract

666 **Introduction:** Emergency Responders (ER) work in contexts of human suffering and make
667 complex decisions in time pressured, high stakes situations. Research indicates that ER,
668 including fire, paramedic, police, ambulance, and emergency medicine staff are at increased
669 risk of mental health difficulties such as depression, anxiety, post-traumatic stress disorder
670 (PTSD), and suicidal thoughts and behaviours compared to the general population.
671 Therefore, the emotional impact of working in emergencies needs to be considered. Moral
672 Injury (MI) is a bio-psycho-social construct that describes the impact on human beings when
673 they witness something or are part of something that violates their values. Research so far
674 has primarily focused on veterans, however, given the application of MI to a variety of
675 occupations, MI with ER is an emerging yet currently under researched area. This study
676 aimed to explore what viewpoints ER have on MI, to inform future research and clinical
677 interventions.
678 **Method**: A Q-sort methodology was used. A review of the literature and seven consultations
679 with ER were used to generate 45 statements about MI (known as the Q-set). Subsequently,
680 N = 21 ER (eight police, five fire service, two emergency medicine, three ambulance, and
681 three community first response staff) completed an online Q-sort. This involved sorting the
682 statements into nine categories from most unlike me to most like me. Participants also
683 provided qualitative comments.
684 **Results:** A by-person factor-analysis with varimax rotation applied was completed. A three-
685 factor solution was retained, which explained 36% of the study variance. The distinct points
686 of view as represented by the factors were titled: 1) Trying to help while feeling hated,

misunderstood, and undervalued, 2) Eaten away by the work, 3) ‘It’s all on me’: personal responsibility and personal protection.

Conclusion: MI is a conceptually useful and qualitatively meaningful framework for discussing the experiences of ER. Results indicate that MI is not a unitary construct, therefore it is important to develop an evidence base for MI in different contexts, with different groups. The Q-set and the results of the Q-sort from this study could contribute to the development of a questionnaire which is specifically validated for ER. Similarly to MI with veterans, the impact of being changed by seeing death was central to two out of the three of the composite viewpoints shared by ER. Results indicate that differences in MI may include perceptions and relationships between ER, the public, (social) media, and organisational leaders. Each composite viewpoint on MI highlighted the impact of social isolation. Results suggest that clinical interventions for ER should also explore the cumulative impact of MI over years of working. It would be of benefit for future research to explore the experiences of ER who have decided to leave their profession because of its impact on their wellbeing.

Key words: *Moral Injury, Emergency Responders, Q-methodology, Occupational Wellbeing*

Introduction

Moral Injury

MI explores the impact on human beings when they witness something or are part of something that violates their values (Shay, 2014). MI is described by Shay as experiencing ‘a

710 betrayal of what's right, by someone who holds legitimate authority, in a high stakes
711 situation' (2014, p.183). Although there is a lack of conceptual integration of MI within the
712 research literature (Litz, & Kerig, 2019), potentially morally injurious events can be
713 considered to fall into two main categories: moral transgressions committed by self: 'what
714 have I done?' and witnessing moral transgressions committed by others: 'what have you
715 done?'. Both forms of potentially morally injurious events could involve acts of commission,
716 omission, or mistakes (Litz & Kerig, 2019). Potentially morally injurious events may also
717 include being exposed to significant inhumanity or suffering, leaving individuals feeling:
718 'unable to successfully accommodate various morally challenging experiences into their
719 knowledge about themselves and the world' (Litz et al., 2009, p. 696). The experience of
720 doing something or going along with something that goes against one's moral code, is
721 associated with internalising emotions, such as shame and guilt. Observing the moral
722 transgressions of others is more likely to be associated with externalising emotions of anger
723 and betrayal. Both internalising and externalising responses can result in social isolation, as
724 shame is associated with a desire to hide, and feelings of anger and betrayal can lead to an
725 individual disconnecting from others (Griffin et al., 2019). However, difficulties defining MI
726 and inconsistent use of terminology for MI (Litz, & Kerig, 2019) limits its generalisability. Litz
727 and Kerig, have therefore identified a need for further research which aims to understand
728 the experiences of those exposed to potentially morally injurious events (2019).
729
730 MI is often viewed as a consequence of traumatic experience (Lentz et al., 2021) and Currier
731 and colleagues (2015b) have argued that symptoms of PTSD and burnout can coincide with
732 MI. Further, when police officers acted in opposition to their moral beliefs leading to MI,
733 they also experienced greater PTSD symptoms and greater fatigue in feeling compassion for

734 other people (Papazoglou, 2017). Shay (2014) argues that MI describes a different
735 experience to PTSD, drawing the distinction that an individual who experiences PTSD loses
736 the felt necessity of safety, whereas an individual who experiences MI loses the felt
737 necessity of trust. When describing how MI changes a person, Shay writes: 'it deteriorates
738 their character; their ideals, ambitions, and attachments begin to change and shrink. Both
739 flavours of MI impair and sometimes destroy the capacity for trust. When social trust is
740 destroyed, it is replaced by the settled expectancy of harm, exploitation, and humiliation
741 from others.' (Shay, 2014, p. 186). The development of a moral code is interwoven with
742 many aspects of human experience including evolutionary and biological mechanisms of in-
743 group co-operation and cultural and social practices of religion and law, as well as individual
744 and relational childhood experiences (Litz & Kerig, 2019). Therefore, the implications of MI
745 are likely complex and wide ranging, and more research is needed to understand
746 experiences of MI in order to inform adequate packages of support for those morally injured
747 at work.
748

749

750 **Moral Injury with Emergency Responders**

751 MI was initially researched with veterans (Shay, 2010) however, there is growing research
752 on MI in civilian samples, for example the development of a measure of MI for front-line
753 healthcare workers during the COVID-19 pandemic (Mantri, et al., 2020). The current
754 research defines ER as people who have received specialist training and were working in
755 emergency situations at the time of the research. The term ER is used instead of First
756 Responder to be inclusive of a wider range of professions, such as emergency medicine
757 staff. ER are likely to witness human suffering as part of their everyday work (Chirico et al.,

758 2020). Their jobs require them to make decisions in life-threatening situations and attempt
759 to deal with the death of those in their care. (Greenberg et al., 2020). Systematic reviews
760 indicate that ER are at increased risk of mental health difficulties compared with the general
761 population, including depression, anxiety, PTSD (Jones et al., 2020) as well as suicidal
762 thoughts and behaviours (Stanley et al., 2016). In addition, ER may work in organisational
763 cultures that place an emphasis on strength, saving others and self-reliance (Jones et al.,
764 2020). These experiences are likely to be exacerbated by the demands of COVID-19
765 (Williamson, et al., 2020). Some ER may have deliberately stayed away from loved ones and
766 sources of support, to protect the vulnerable (Billings et al., 2021). This may have resulted in
767 individuals without access to the social support that they needed to protect their emotional
768 wellbeing (Wright et al., 2021). Murray and colleagues' (2018) research indicates that the
769 concept of MI resonates with medical students working in emergency medicine and the
770 authors argue for the importance of future research exploring MI in different professional
771 groups.
772
773 The majority of ER in the United Kingdom work within the public sector. Experiences of MI
774 are influenced by systemic factors, for example individuals working in public services can
775 often experience conflicts between their values and the restrictions of resource-limited
776 organisations (Williams et al., 2020). Qualitative research with other public sector groups,
777 specifically Child Protection practitioners has identified the difficulty to function ethically
778 within an unsupportive and flawed system (Haight et al., 2017). A conflict may arise for ER
779 who may be motivated to work in difficult circumstances because of their moral codes, but
780 who also therefore may be at more risk for experiencing potentially morally injurious
781 events. For example, a nurse working in an accident and emergency department who is

782 motivated by values to alleviate suffering and promote life will likely witness the suffering of
783 their patients and their loved ones, the death of patients in their care and might face ethical
784 decisions about who to save (Chirico et al., 2020). ER may be at heightened vulnerability to
785 MI as they attempt to deal with a high number of conflicting expectations. An order from a
786 superior which aligns with policy and procedure may result in the frontline worker
787 withholding assistance and having to deal with the impact of that decision. For example, at
788 the school shooting in Uvalde, police were instructed to not enter the building, risking the
789 lives of children (BBC news, 2022). Further, ER must attempt to operationalise conflicting
790 public interpretations of moral goods, what does mean to help, to save, to protect, to heal,
791 to punish wrongdoing, to promote justice? Morality is central to ER working, thought
792 experiments used in ethical debates around free will, death and suffering, relativism,
793 absolutism, and utilitarianism (Vardy & Grosch, 1999) are present in the high stakes, time
794 pressured decisions ER make. Further, there is a moral duality to emergency work.
795 Alongside the powerful motivation to help, and the ethical expectation to 'do no harm'
796 (Beauchamp, & Childress, 2019), each shift, each call, each interaction contains the
797 possibility of harm, resulting in regular exposure to circumstances which may threaten or
798 violate an individual's values. ER are expected to consistently make the correct call, with
799 their decision making potentially impacted by adrenaline, stress, sleep deprivation and long
800 shifts without regular breaks. A moral wound suffered at work may be further prevented
801 from healing by a lack of support and a loss of trust in organisations, particularly when
802 systems blame individuals rather than looking into systemic and organisational processes
803 (Haight et al., 2017). A systematic review and meta-analysis of occupational MI identifies
804 the need for more research on MI for civilian samples (Williamson et al., 2018). Due to the
805 large number of differences in civilian compared with military working, it follows that

806 experiences of MI are likely different for these populations. For example, MI for veteran
807 samples may involve reflecting on what has happened during a conflict when the individual
808 has finished that tour, whereas for ER, experiences of MI may relate to work that is ongoing,
809 with an expectation to be ready to go back to their next shift. There is a paucity of research
810 of MI for ER despite a clear application and utility. The current research aims to reduce this
811 gap.

812

813 **Moral Injury and Clinical Psychology**

814 Social isolation can be a consequence of both internalising shame responses and
815 externalising betrayal responses to potentially morally injurious events (Litz, & Kerig, 2019)
816 Further, avoidance is an understandable response to traumatic experience and emotional
817 distress (Greenberg et al., 2020). A lack of practical opportunities for shift staff to seek
818 support and organisational attitudes towards mental health can also act as barriers to ER
819 seeking support (Haugen et al., 2017). In a frequently cited study of ambulance workers,
820 those with high emotional exhaustion were significantly more likely to report that they
821 'never' had enough time to recover following critical incidents (Alexander & Klein, 2001).
822 Within the same study, 73% of 90 participants judged the ambulance service to 'never' be
823 concerned about staff welfare after disturbing incidences (Alexander & Klein, 2001). It is
824 interesting to consider whether ambulance workers would report if things have improved
825 since the publication of these results. Research indicates that sharing stories and
826 normalising vulnerability about moral distress preserves wellbeing (Williams et al., 2020;
827 Adamson et al., 2018). Supervision, consultation, and support of staff are key components
828 of the work of Clinical Psychologists (British Psychological Society, 2012). Researchers and
829 policy makers identified the need for increased psychological support for staff during the

830 COVID-19 pandemic (Greenberg et al., 2020). Society places considerable expectations on
831 ER, often to run towards situations where most would run away. The impacts of this are
832 unclear and emerging. Therefore, it is timely for Clinical Psychologists to understand ER
833 experiences of MI, and to respond as part of a "trustworthy clinical community" (Shay,
834 2014, p. 182). MI offers a non-diagnostic framework to discuss the impact of distress, which
835 allows space for the exploration of the spiritual and existential components of traumatic
836 experience. Further, Murray (2019) describes how the framework of MI with ER, for
837 example paramedics, affords individuals opportunities to talk about the impact of seeing
838 people suffering, without threatening their ability to carry on working. To facilitate access to
839 evidence-based psychological support for MI, further research is needed to understand
840 what MI means for different occupational groups. Safe and effective clinical practice also
841 relies on having suitable ways of measuring outcomes. A review of MI identifies the absence
842 of a gold standard measure of MI (Griffin et al., 2019) The current research aims to
843 meaningfully contribute to the future research into development of a measure of MI for ER.
844

845

846 **Aims of the Research**

847 MI is a complex and currently under-researched topic, which may result in a number of
848 biological, psychological, social, existential and spiritual consequences (Lentz et al., 2021).
849 Little is known about the viewpoints that exist on MI for people working in emergency
850 situations. The present research aims to use Q-methodology to contribute to addressing
851 four identified gaps in the research literature, a) further exploration of the concept of MI, b)
852 extending the knowledge base beyond military and veteran samples, c) providing qualitative

data regarding lived experience of potentially morally injurious events and d) offering a contribution to the development of a questionnaire of MI for ER. Q-Methodology, described as operant subjectivity (Watts & Stenner, 2012) is a mixed-method design, which aims to scientifically study the subjective by exploring distinct viewpoints that exist on a topic of interest. Using Q-methodology to ask what different opinions exist for ER in relation to MI can therefore meaningfully contribute to refining the conceptualisation of MI and to inform both research into questionnaire development as well as recommendations for clinical practice and staff support. MI is a multifaceted concept, that is likely to connect with those with different life experiences, values and who work in different contexts in a variety of ways. Therefore, the existing measures of MI, validated for veteran and healthcare samples may fail to fully capture MI for ER. The current research will explore what the concept of MI means for ER.

Method

Participants

Ethical approval was granted in January 2021 by the research ethics committee at the University of Liverpool. A power analysis was not required as the research used Q-methodology. Q-methodology aims to identify and describe points of view that exist for a subject or group. As Q does not make conclusions about a population, a specific sample size large enough to identify an effect is not required. One approach to Q-methodology is to recruit approximately half the number of participants as the number of statements in the Q-set (Watts & Stenner, 2012). A Q-set of 40-60 items was proposed, therefore, the decision

876 was made to sample between 20-30 ER. Participants refer to those who completed the Q-
877 sort, and do not refer to the consultants who contributed to the statement generation (the
878 Q-set). Participants were eligible to take part if they were aged 18 or over and had
879 experience working in a professional capacity in emergency contexts in the UK in the last 12
880 months. Participants were required to complete the Q-sort in English using a device with
881 access to the internet. Participants were excluded if they were working in ER outside of the
882 UK, or if their work in ER was as part of the military. ER who had retired, or not worked in
883 emergencies in the last 12 months, were also excluded. Eligibility was confirmed by
884 participants completing three mandatory screening questions.

885

886 Participants were recruited online via email advertisements and a variety of social media
887 platforms, associated with different user bases to maximise the likelihood of different
888 viewpoints. Recruitment aimed to target a range of ER working in different settings. People
889 interested in taking part in the study were invited to contact the researcher via email, and
890 then the anonymous study link was shared with them. The requirement of participants to
891 contact the researcher in the first instance was to reduce the risk of 'bots' completing the
892 survey and thus compromising the data. At the end of the survey participants were invited
893 to share the study link with anyone they felt thought differently to them about MI. It was
894 made clear to participants that there was no obligation to take part. N = 22 people emailed
895 the researcher expressing interest in participating in the study, two participants were not
896 eligible as they were based in the United States of America, and one emailed after
897 recruitment had closed. The researcher received feedback from one forum that there was
898 concern that the requirement to email in the first instance threatened anonymity. A

899 decision was therefore made to share the study link directly on closed forums and groups to
900 improve uptake.
901
902 **Sample Demographics**
903 The study link was opened on 86 occasions, 60 people completed the consent form, 57
904 answered yes to the screening questions and 51 people went on to participate in the Q-sort
905 study. The data of 27 people were removed who discontinued before completing the Q-sort
906 in full. The data of a further three participants was removed who completed the Q-sort
907 incorrectly (this was prior to the survey code being updated). This left a sample of 21
908 participants (see Table 2 for demographic information), with most representation from
909 police and fire services. The sample had a balance of years of experience, 11 people had
910 worked in emergencies for ten years or less, and ten people had worked in emergencies for
911 11 years or more. One participant (7) did not load onto any one factor. Consistent with how
912 results are presented using the Q-methodology analysis software, participant 7 is
913 represented in the sample demographics, but not the factor demographics.
914
915 **Design**
916 Q-methodology is a mixed method cross-sectional design. The aims of the research were to
917 identify different points of view that exist on MI for ER by completing a by-person factor
918 analysis, so that the items were treated as the sample, and the participants were treated as
919 the items. This way different factor solutions can be applied to categorise similar
920 viewpoints. As is standard practice in Q, the design consisted of two phases: firstly,

921 statements on MI were generated and refined to create the Q-set, and secondly,
922 participants were recruited to sort the Q-set into different categories to best represent their
923 viewpoint, this is known as the Q-sort. Participants were then requested to provide
924 qualitative comments about the process of sorting the statements, and to offer comments
925 on noteworthy statements. No formal qualitative analysis was conducted.

926

927 **Materials**

928

929 ***The Q-Set***

930 A concourse of 133 MI opinion statements was developed through consultations and
931 through review of UK newspaper articles, such as Cosslett (2021) and BBC news (2020). The
932 following research literature also informed statement generation: Lentz et al., (2021), Hines
933 et al., 2021) and Murray et al., (2018). Statements were also taken from existing MI
934 measures: The Moral Injury Symptom Scale-HP (Mantri et al., 2020), The Moral Injury Events
935 Scale (Bryan et al., 2016), and The Moral Injury Questionnaire, Military Version (Currier et
936 al., 2015a). Statements were further informed by discussions with supervisors, who are
937 researchers and teachers in the field of MI. Finally, statements were informed from a MI
938 symposium held on the 28th of February 2020 at St Mary's Hospital London, attended by
939 researchers, teachers, and those with lived experience of MI in a variety of ER settings.

940

941 Seven consultations were held with individuals who had expertise working in: emergency
942 medicine, fire services, police, ambulance services, and research. Consultations were
943 completed individually, either over the telephone or video call according to each individual

944 expert's preference. Experts were offered a £15 voucher as a thank you for their time. One
945 expert declined the £15 voucher. Each consultation began with the researcher defining MI
946 for the purposes of the research as: 'the impact on us as human beings when we witness
947 something or are part of something that violates our values, or moral code. This could be
948 because of something we do, something we fail to do, something we see other people do,
949 or perhaps something we hear our organisation or team doing.' It was also explained that
950 the aim of the consultation process was to collaborate with people who have expertise in
951 emergency responding or MI to develop a list of statements that helps capture the key
952 aspects of MI. This would then be used in the next stage of the research in which ER would
953 sort the statements. Consultations lasted between 40 – 120 minutes. Notes taken during
954 consultations were transcribed and reviewed by the researcher to identify statements to
955 add to the concourse. Some statements were taken verbatim from consultations, whereas
956 others were developed by the researcher as a way of summarising a specific story or
957 experience shared during the consultation. For example, the statement: 'I have complied
958 with orders that go against every moral fibre in my body' was developed following an expert
959 sharing a specific story about how colleagues disagreed but were made to go along with a
960 decision made in an emergency, and the 'go against every moral fibre in my body' was the
961 expert's own phrase. Wherever possible, the expert's own words were used. Statements
962 were formatted so that they were all in the first person. Some statements taken from
963 measures were amended so not to refer to a specific context, such as war or a hospital. This
964 was to ensure that the statements would be relevant for those working in a variety of
965 emergency contexts. A decision was made to develop a structured Q-set, using the Moral
966 Injury Symptom Scale-HP (Mantri, et al., 2020) as a way of organising statements into broad
967 categories of: betrayal, guilt, shame, moral concerns, religious struggle, loss of

968 religion/spiritual faith, loss of meaning, difficulty forgiving, loss of trust and self-

969 condemnation (Mantri et al., 2020). This was to promote the development of a balanced Q-

970 set. It was not required to have the same number of statements for each category.

971 Examples are provided in Table 1.

972 **Table 1**

973 *Example Q-set Statements*

Category of Moral Injury Symptom-Scale HP	*Example Statement:*	*Statement Origin*
Betrayal	I am angry about how my organisation scapegoats' members of staff	Moral Injury Symposium (attended by the research team in February 2020).
Guilt	I feel guilty for times of being bored at work during COVID	Consultation 2
Shame	I am ashamed of being part of a system where people come to harm	Consultation 2
Moral Concerns	I have seen things that are morally wrong	Moral Injury Events Scale
Religious Struggle	I sometimes feel God is punishing me for what I've done or not done at work	Moral Injury Symptom-Scale HP
Loss of religion/Spiritual faith	Things that happen at work have led me to question my faith or belief in a higher power	Consultation 1
Loss of meaning	Seeing so much death has changed me	Moral Injury Questionnaire Military version
Difficulty forgiving	I will not forgive my employer for what they have made me do	Consultation 6
Loss of trust	I find it hard to trust other professionals	Consultation 3
Self-condemnation	If I doubt whether or not I did my best in a emergency situation, it will eat me up inside	Consultation 5

974

975

976 The Q-set development phase was concluded once there was representation from a variety

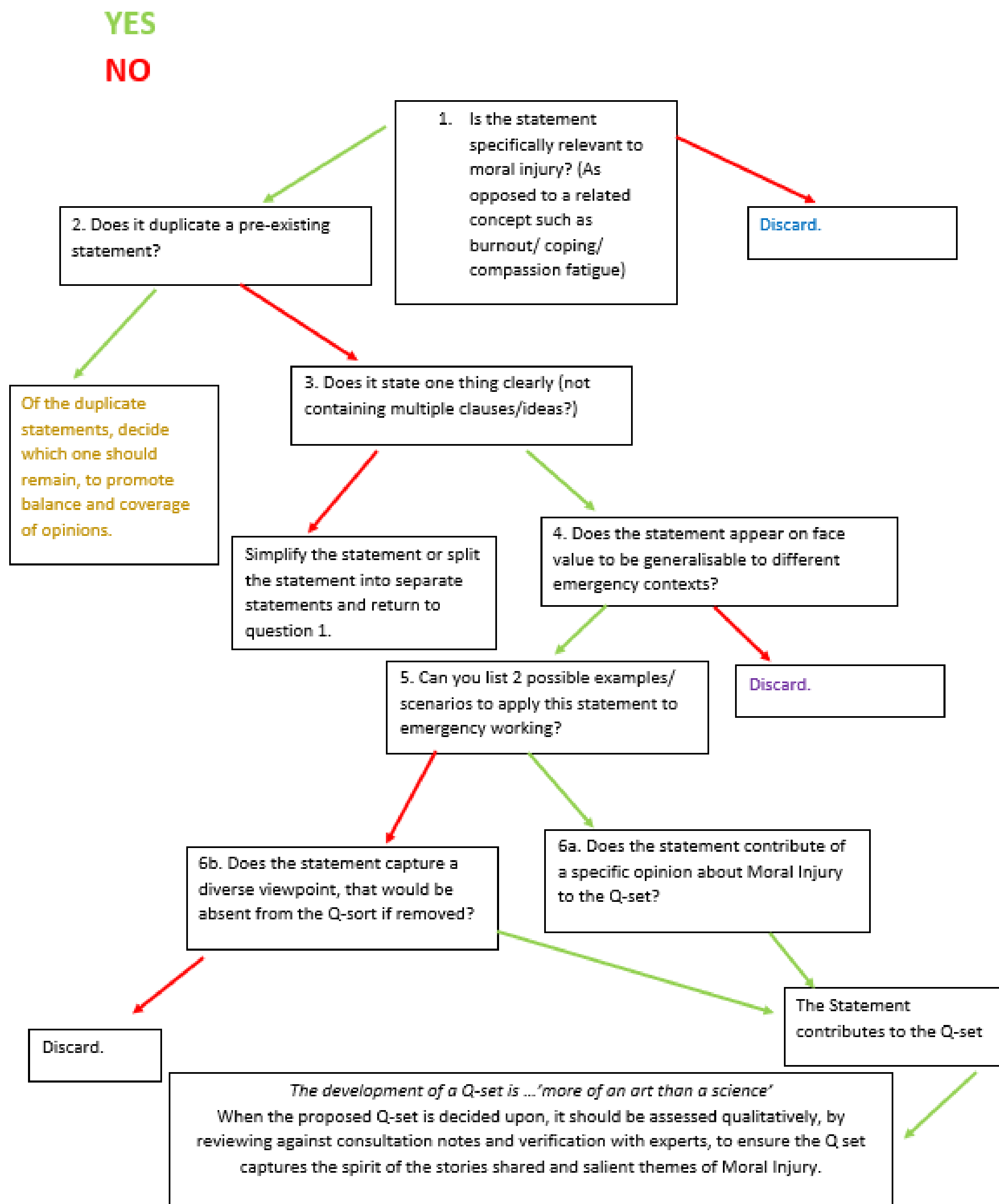
977 of ER occupational groups and there was evidence of saturation in the concourse. The

978 concourse was then refined to a 45-statement Q-set. The Q-set aimed for 'coverage and

979 balance' (Watts & Stenner 2012) by selecting statements that were representative of the
980 concourse and of the stories shared during the consultations, defined in Q research as 'more
981 an art, than a science' (Brown, 1980 p. 186). The process of refining statements was made
982 using a decision tree (see Figure 1). This involved removing any duplicate statements, and
983 removing statements that referred to a related concept, such as burnout, rather than
984 specifically MI. The full concourse and the decision tree were shared with the research
985 team, and a collective decision was made about which statements to include. This aimed to
986 minimise the risk of bias, whereby the researcher may unintentionally include statements
987 that most aligned with their views of MI. The 45-item Q-set consisted of 26 statements from
988 consultations, eight from measures of MI, five from supervision discussions, three from
989 academic papers on MI, two from newspaper articles, and one from the MI symposium. The
990 proposed Q-set was shared with all individuals who consulted on the study, highlighting
991 which specific statements were their contributions. The purpose of this was to ensure that
992 the statements included felt representative of the consultations and to provide an
993 opportunity for experts to amend or request removal of any statement as well as to offer
994 any further comments on the Q-set. After hearing back from all consultants, the wording of
995 one statement was edited from: 'I have to make decisions which put my colleagues at risk'
996 to 'I have to make decisions which could put my colleagues at risk'. The final Q-set was
997 submitted to the university ethics committee and received approval. The Q-set is available
998 in Table 3.

Figure 1

Q-Set Decision Tree

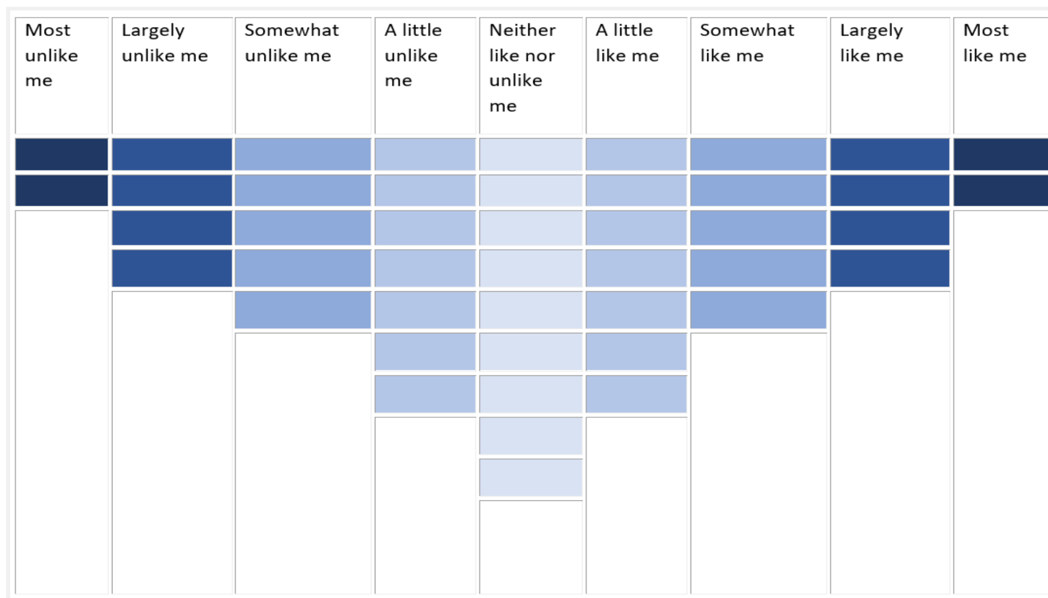


999 ***The Q-Sort***

1000 To measure viewpoints on MI using Q-methodology, a Q-grid was developed for participants
1001 to sort the 45-statement Q-set into (see Figure 2). Each box on the grid represents a position
1002 for one statement to be sorted into. This then provides numerical data about the extent to
1003 which statements most closely align with an individual's point of view on MI. As each box
1004 can only be used once, the participant must therefore rank statements against other
1005 statements to complete the task. To accommodate the 45 statements, a -4 to +4 grid was
1006 created. Whilst there is no required distribution for a Q-grid, the tradition in Q is to use a
1007 symmetrical distribution (Cottle & McKeown, 1980) with fewer statements to be sorted into
1008 the extremes (most like and most unlike). Further, the preferred wording of grids is to go
1009 from most to most, rather than from least to most (Watts & Stenner, 2012). Whilst
1010 statements could have also been organised into a -5 to +5 grid, a decision was made that
1011 due to the online nature of the Q-sort, this may increase the burden on participants and
1012 lead to incomplete responses. The Q-sort was developed as an online survey, powered by
1013 Qualtrics (https://www.qualtrics.com/uk/) and piloted by a member of the research team
1014 and an individual with lived experience of emergency working.

Figure 2

Q-sort Grid



1015 **Procedure**

1016 Participants were provided with an anonymous survey link, which when accessed showed
1017 the participant information screen, leading to the option to continue to a consent screen. To
1018 proceed to the study, all consent items had to be completed, and participants could choose
1019 if they would prefer the researcher not to include direct quotes in the write-up of results.
1020 Due to the nature of the sorting task, participants were advised that the Q-sort is best
1021 completed on a laptop or desktop computer, rather than a smartphone or tablet.
1022 Participants were screened to assess that they met criteria for the research, including that
1023 they had worked in emergency situations in the UK within the last 12 months, that they had
1024 specialist training to work in emergency situations, and that they were aged 18 or over.
1025 Participants completed brief demographic information and were requested to sort the Q-set
1026 into three broad categories, agree, disagree and neutral, by clicking and dragging the
1027 statements into the corresponding boxes. It was made clear that statements were

1028 presented in a random order. The initial sort enables participants to become familiar with
1029 the statements and can guide participants' more fine-grained decisions in the main Q-sort
1030 task (Watts & Stenner, 2012). Following this, participants were asked to sort the statements
1031 into the nine categories, ranging from most unlike me to most like me, to align with the Q-
1032 sort grid. At the end of the sorting page, participants were then presented with a checklist
1033 to confirm they were happy with their sort, and to confirm that all statements had been
1034 sorted, with the correct number of statements in each box. Initially, this method led to a
1035 small number of errors from three respondents, for example, placing four statements in a
1036 box that required five statements. Due to these errors, the Q-sort was taken offline for
1037 three days, whilst the code on Qualtrics was modified, so that it was clear when they had
1038 not sorted the correct number of items, and in addition, it was not possible for participants
1039 to proceed if the grid was completed incorrectly.
1040
1041 Participants were then invited to provide qualitative comments about the sorting process,
1042 including sharing comments specifically on the statements they had placed into the 'most
1043 like me' and the 'most unlike me' categories. They were encouraged to share any ideas for
1044 statements that were missing from the current research, and their experience of the sorting
1045 process. Following this, participants were provided with the option to hear about the results
1046 of the study and to participate in a prize draw with three chances to win a £30 Amazon
1047 voucher, as a thank you for their time. 18 people provided an email address to hear about
1048 the results of the study, 16 people opted into the prize draw. At the end of the study,
1049 participants were provided debrief information, including who to contact with questions,
1050 make a complaint and where to access support. Details of support agencies were also
1051 available at the end of each page of the survey. If a participant chose not to continue the

survey, they were re-directed to the debrief information, so that the debrief information was not only available to those who completed the Q-sort.

Plan of analysis

Descriptive statistics were used for demographic data. Q-sort data was analysed using by-person Centroid factor analysis, with a varimax rotation applied to identify shared points of view across respondents, identifying patterns of similarity between individual Q-sorts. This was then used to create composite Q-sorts, a Q-sort that represented each factor. Interpretation of the factor included a review of salient and distinguishing statements for each factor. Qualitative comments were used to further enrichen the factors and to develop a title for that factor.

Results

A by-person centroid factor analysis with varimax rotation was completed using KenQ Analysis Desktop Edition (KADE; https://shawnbanasick.github.io/ken-q-analysis/). Initially, a four-factor solution was trialled, however, a three-factor solution was retained through a review of scree plots and by applying the Kaiser criterion retaining all factors with an Eigenvalue of >1. The solution explained 36% of the variance, 14% of the variance was explained by Factor 1 (F1), 9% by Factor 2 (F2), and 13% by Factor 3 (F3).

1073 KADE output includes a composite Q-sort for each factor, which is a visualisation of a
1074 hypothetical Q-sort that represents that factor. Each factor was refined and named through
1075 review of how the statements were ranked in composite Q-sorts, starting with salient
1076 statements, those placed in +4 (most like me) and -4 (most unlike me) positions for each
1077 factor. Statistically significant distinguishing statements for each factor were also used to
1078 interpret the factor solution. These are statements which are ranked in a statistically
1079 different position in one factor, at either a .05 or a .01 level, compared to the other two
1080 factors (represented in figures 3, 4 and 5 as * and ** respectively). Statistically
1081 distinguishing statements for each factor are important in interpreting what is distinct about
1082 that viewpoint. Composite Q-sorts also identify which statements were placed higher or
1083 lower in that factor, compared to other factors by using Z-scores (represented by ➢ and ≺
1084 respectively). For example, statement 4: ‘I had to make decisions at times when I didn’t
1085 know the right thing to do’ was placed in position -1 (somewhat unlike me) in F1, in -3
1086 (largely unlike me) in F2, and it was ranked 0 (neither like nor unlike me) in F3. Statement 4
1087 is a statistically significant distinguishing statement for F2, which means it tells us something
1088 distinct for that viewpoint. Qualitative comments by participants were used to further
1089 understand and contextualise that opinion. All participants consented to qualitative quotes
1090 being included in the write up of findings; participants were allocated a random
1091 identification number (ID) that is different from their participant number to further preserve
1092 anonymity. Demographic information (see Table 2) was reviewed last, after possible factor
1093 names and explanations had been proposed, to avoid researcher bias about different
1094 groups, their experiences, and the opinions they may hold.

1095

Table 2

Demographic Information for Each Factor

Demographics	Sample N	Factor 1 N	Factor 2 N	Factor 3 N
Gender				
Male	15	7	4	3
Female	6	4	0	2
Profession				
Police	8	7	0	1
Fire	5	2	2	1
Emergency Medicine	2	0	0	2
Ambulance	3	2	0	0
Community First Responder	3	0	2	1
Years working in emergencies				
0-5	6	1	0	4
6-10	5	5	0	0
11-15	3	1	1	1
16-21	3	2	1	0
21+	4	2	2	0

1096 **F1: Trying to Help while Feeling Hated, Misunderstood, and Undervalued**

1097 The composite Q-sort for F1 placed statement 20: ‘I am concerned that the general public
1098 have lost faith in my organisation’ and statement 5: ‘seeing so much death has changed me’
1099 in the most like me (+4) category. Most unlike me (-4) for F1 are statement 36: ‘I have
1100 complied with orders that go against every moral fibre of my being’ and statement 6: ‘I have
1101 made mistakes that led to injury or death’. Distinguishing statements (highlighted in dark
1102 grey in Figure 3) include ‘working in this job ultimately puts you off people’ (statement 30,
1103 largely like me) and ‘things that happen at work have led me to question my faith or belief
1104 in a higher power’ (statement 8, largely unlike me).

Figure 3

Composite Q-sort for F1

Most unlike me -4	Largely unlike me -3	Somewhat unlike me -2	A little unlike me -1	Neither like nor unlike me 0	A little like me 1	Somewhat like me 2	Largely like me 3	Most like me 4
** ≺ 36. I have complied with orders that go against every moral fibre of my being	2. I have acted in ways that violate my own moral code or values	** ≺ 12. I feel ashamed that as professional I look forward to dealing with people's suffering	*4. I had to make decisions at times when I didn't know the right thing to do	** 42. Working during the pandemic resulted in me having to hold more responsibility alone	** 9. I am concerned that the culture of my profession has changed me	13. I feel I am abandoning my colleagues when I cannot go into work	** 38. I make jokes about strange and terrible situations	5. Seeing so much death has changed me
* ≺6. I have made mistakes that led to injury or death	* 15. I am scared of going to work	27. I am suspicious of what happens to inform I share about what I witness at work	33. I have thought about leaving my job because I can't get ethical dilemmas out of my mind	44. It is hard to deal with my loved ones' responses, when I am involved in high profile emergency situations	41. No one helps you figure out how to manage the panic and fury of ethical dilemmas	24. I had no choice other than to become resilient because of the dirty things I have to do	** ≻30. Working in this job ultimately puts you off people	** ≻ 20. I am concerned that the general public have lost faith in my organisation
	** ≺ 8. Things that happen at work have led me to question my faith or belief in a higher power	23. I am ashamed of being part of a system where people come to harm	26. I find it hard to trust other professionals	** ≺14. I feel betrayed by tokenistic conversations about support without follow through	45. In emergency working I have experienced a conflict between the logical thing to do and the human thing to do	** 32. f I doubt whether or not I did my best in an emergency situation it will eat me up inside	25. If I did not care about my work it would not damage me as much	
	17. I sometimes feel God is punishing me for what I've done or not done at work	31. There are times at work I am too scared to make decisions because of the potential fall-out.	40. I am angry that I have to choose between my duty of care and my personal wellbeing	39. I have to make decisions which could put my colleagues at risk	7. A lack of resource has prevented me from reducing suffering or saving a life	** ≻ 28. I am bothered that I feel numb or disconnected in life threatening situations	1. I have seen things that are morally wrong	
		37. I will not forgive my employer for what they have made me do.	** ≺ 22. Leaving my job would reflect poorly on me as a person	16. I have forgiven myself for what has happened to me or others whom I work with	35. I have had to decide whether to disregard a person's wishes in order to save their life	34. It's painful to give up on someone when you have been fighting for them to live.		
			** ≺ 18. I feel conflict between telling the truth and protecting people from distress	*≺ 19. I am angry how my organisation scapegoats' members of my team	** 3. I have felt guilt for failing to save a life			
			21. I feel guilty for times of being bored at work during COVID	11. I am troubled by witnessing health inequalities at work	43. I do not like being called a hero			
				** ≻10. I used to speak up about Moral dilemmas at work, now I just get on with it				
				** ≺29. I struggle to be polite when interacting with people who have done something I consider to be wholeheartedly wrong.				

1105 Reviewing the position of the statements in Figure 3 indicates that F1 discusses a key point

1106 of view about the impact of feeling a disconnect between their desire to help and how they

1107 are perceived by others. The impact of feeling 'put off people' is indicated by the following

1108 quotation:

1109

1110 ID7*: 'The number of difficult people that we deal with, makes my personal circle smaller and*

1111 *my patience for wider social engagement is reduced in my personal life'*

1112

1113 Quotations also connect perceptions of professions in the media with feeling undervalued

1114 by the public and unrecognised and unprotected by the government.

1115

1116 *ID8: 'My mental health is most affected by the media's constant barrage of hatred towards*

1117 *our profession.'*

1118

1119 *ID12: 'The hatred for the police grew during covid. We were still out, doing what we always*

1120 *do and yet we were hated more. We were not even listed in the drop down of occupations on*

1121 *the gov website when applying for a covid test. We were not listed as necessary roles to get*

1122 *the vaccine with other emergency services. We got spat at and attacked by members of the*

1123 *public and went home and read stories of people hating us and the government forgot us.*

1124 *[This] is a blow that I don't think I will ever properly recover from.'*

1125

1126 F1 also explores feeling changed by seeing so much death and in particular the impact of

1127 feeling disconnected or potentially apathetic, scoring higher than other factors on

1128 statement 28: ‘I am bothered that I feel numb or disconnected in life threatening situations’

1129 and statement 10: ‘I used to speak up about moral dilemmas, but now I just get on with it’:

1130 *ID12: …’I think I have fully disconnected myself. We are expected to have a higher limit of*

1131 *strength. We are expected to get on with it and move on. No wonder so many of us leave the*

1132 *job with PTSD.’*

1133 On the other hand, this perspective also represents feelings of confidence in relation to

1134 ethical dilemmas, feeling clear and certain about values. F1 draws attention to the impact of

1135 social media and hostile public attitudes, potentially resulting in a pronounced in group/out

1136 group dynamic (Litz & Kerig, 2019). Additionally, there may be a loss of faith, not necessarily

1137 in a higher power, but perhaps in specific organisations, or in humanity.

1138 ID16: ‘*Social media goes out of its way to pick us apart and humiliate us. It's not to say that I*

1139 *don't think it hasn't been good to prevent excesses by Police; accountability is important. But*

1140 *castigating officers acting poorly under intense stress isn't fair, and it also isn't reflective of*

1141 *them or the organisation overall. But if 90% of people only have the bad stuff gracing their*

1142 *accounts, that will influence their opinions. The fallout is obvious. Assaults against Officers*

1143 *up. People are less likely to assist us in investigations. Even murders! People are more likely,*

1144 *with no context or understanding, [to] interfere or take the side of the detained person,*

1145 *because Police putting in a stop must automatically being doing something dodgy. The*

1146 *greater upset for me is that there is no ability to flag up much that is counter to this. People*

1147 *don't know just what good work we do.’*

1148 F1 explained the biggest portion of variance in the factor solution, demographically was

1149 associated with people who have worked in emergency contexts for a variety of durations,

1150 the highest ratio of police officers across the sample are associated with F1 (see Table 2
1151 above).
1152

1153 **F2: Eaten Away by the Job**

1154 F2 also identifies the importance of being changed by seeing death (statement 5, most like
1155 me), however, distinct from F1, rated most like me for F2 is statement 32: 'if I doubt
1156 whether or not I did my best in an emergency situation it will eat me up inside'. This is
1157 illustrated by the following quotations:

1158 *ID11: 'I have dealt with so much and did feel unsure at some and cannot forget them. I am*
1159 *eaten up now'*

1160 *ID17: 'I feel more irritable and not the happy person I used to be'*

1161 Further, whilst feeling bothered by feeling numb or disconnected was ranked as somewhat
1162 like me in F1, in contrast it is ranked as most unlike me in F2, demonstrating something
1163 distinct about this viewpoint. Reviewing the positions of statements in Figure 4, F2 scores
1164 higher for concerns that the culture of their profession has changed them, higher for guilt
1165 for failing to save a life and having their faith in a higher power questioned by their work
1166 compared with other factors. People who scored highly on this factor had higher agreement
1167 with statements regarding difficulty forgiving themselves and feeling scared of going into
1168 work:
1169

1170 *ID11: 'I thought I was stronger but the linking of the death with a person was hard to take. I*
1171 *now suffer PTSD and so feel changed from what I felt was a stronger me.'*

1172 However, this point of view also talks about the importance of seeking help, scoring lower
1173 than other factors on: 'I find it hard to trust other professionals' and 'no one helps you deal
1174 with the panic and fury of ethical decision making'. Although some of the quotations
1175 indicate complexities around seeking help and connection, with the possibility that
1176 increased reluctance to talk to others is another aspect by which they have been changed by
1177 the work. Although this participant placed statement 10: 'I used to speak up about moral
1178 dilemmas at work, now I just get on with it' in position -4 (most unlike me) they qualitatively
1179 expressed that:

1180 *ID17: 'I used to feel talking to people was helpful but now it is just an unwanted task'*

1181 Whereas others had found ways to cope with their work through the years of experience:
1182 *ID19: 'Through time and experience you develop a coping mechanism to dealing with death'.*

Figure 4

Composite Q-sort for F2

Most unlike me -4	Largely unlike me -3	Somewhat unlike me -2	A little unlike me -1	Neither like nor unlike me 0	A little like me 1	Somewhat like me 2	Largely like me 3	Most like me 4
17. I sometimes feel God is punishing me for what've done or not done at work	**≺ 4. I had to make decisions at times when I didn't know the right thing to do	27. I am suspicious of what happens to information I share about what I witness at work	20. I am concerned that the general public have lost faith in my organisation	18. I feel conflicted between telling the truth and protecting people from distress	34. It is painful to give up on someone when you have been fighting for them to live	1. I have seen things that are morally wrong	14. I feel betrayed by tokenistic conversations about support without follow through	5. Seeing so much death has changed me
**≺ 28. I am bothered that I feel numb or disconnected in life threatening situations.	**≺ 26. I find it hard to trust other professionals	30. Working in this job ultimately puts you off people	33. I have thought about leaving my job because I can't get ethical dilemmas out of my mind	**≻ 37. I will not forgive my employer for what they made me do	19. I am angry how my organisation scapegoats' members of staff	**≻ 8. Things that happen at work have led me to question my faith or belief in a higher power	**≻ 9. I am concerned that the culture of my profession has changed me	**≻ 32. If I doubt whether or not I did my best in an emergency situation it would eat me up inside
	**≺ 38. I make jokes about strange and terrible situations	**≺ 35. I have had to decide whether to disregard a person's wishes in order to save their life	*≺ 16. I have forgiven myself for what has happened to me or others whom I work	40. I am angry that I have to choose between my duty of care and my personal wellbeing	24. I have no choice other than to become resilient because of the dirty things I have to do	*≻ 39. I have to make decisions which could put my colleagues at risk	**≻3. I have felt guilt for failing to save a life	
	21. I feel guilty for times of being bored at work during COVID	2. I have acted in ways that violate my own moral code or values	**≺ 42. Working during the pandemic resulted in me having to hold more responsibility alone	**≺13. I feel I am abandoning my colleagues when I cannot go into work	44. It's hard to deal with my loved one's responses when I am involved in high profile emergency situations	11. I am troubled by witnessing health inequalities at work	29. I struggle to be polite when interacting with people who have done things I consider be wholeheartedly wrong	
		10. I used to speak up about moral dilemmas at work, now I just get on with it	**≺ 43. I do not like being called a hero	*≺ 41. No one helps you figure out how to manage the panic and fury of ethical decision making	*22. Leaving my job would reflect poorly on me as a person	25. If I did not care about my work, it would not damage me as much		
			31. There are times at work I am too scared to make decisions because of the potential fallout	7. A lack of resource has prevented me from reducing suffering or saving a life	**≻15. I am scared of going to work			
			36. I have complied with orders that go against every moral fibre in my body	12. I feel ashamed that as a professional I look forward to dealing with human suffering	45. In emergency working I have experienced a conflict between the logical thing to do and the human thing to do			
				**≻6. I made mistakes that led to injury or death				
				23. I am ashamed of being part of a system where people come to harm.				

1183 A review of the demographic information shows that individuals who scored onto this factor
1184 had worked in emergency situations for the longest time on average, which may help
1185 illuminate why this factor scored highly on ideas around feeling changed by their work, as
1186 professionals may take a more reflective stance of their careers over the years. It may also
1187 say something about the cumulative impact of ER working.

1188

1189 **F3: It's All On Me: Personal Responsibility and Personal Protection.**

1190 Statements placed in the most like me category for F3 were statement 38: 'I make jokes
1191 about strange and terrible situations' and statement 29: 'I struggle to be polite when
1192 interacting with people who have done things that I consider to be wholeheartedly wrong'.
1193 Distinguishing statements for F3 included statement 42: 'working in the pandemic has
1194 resulted in me having to hold more responsibility alone', statement 27: 'I am suspicious of
1195 what happens to information I share about what I witness at work', and statement 40: 'I am
1196 angry that I have to choose between my duty of care and my personal wellbeing.'
1197 Statements placed in the most unlike me category were statement 15: 'I am scared of going
1198 into work' and statement 17: 'I sometimes feel God is punishing me for what I've done or
1199 not done at work.' The composite Q-sort for F3 is presented in Figure 5 (below).

Figure 5

Composite Q-sort for F3

Most unlike me -4	Largely unlike me -3	Somewhat unlike me -2	A little unlike me -1	Neither like nor unlike me 0	A little like me 1	Somewhat like me 2	Largely like me 3	Most like me 4
*≺ 15. I am scared of going to work	31. There are times at work I am too scared to make decisions	**≺ 5. Seeing so much death has changed me	12. I feel ashamed that as a professional I look forward to dealing with people's suffering	*≻ 4. I had to make decisions at times when I didn't know the right thing to do	1. I have seen things that are morally wrong	**≻ 40. I am angry that I have to choose between my duty of care and my personal wellbeing	13. I feel I am abandoning my colleagues when I cannot go into work	**≻38. I make jokes about strange and terrible situations
17. I sometimes feel God is punishing me for what I've done or not done at work	37. I will not forgive my employer for what they made me do	** 8. Things that happen at work have led me to question my faith or belief in a higher power	26. I find it hard to trust other professionals	44. It is hard to deal with loved ones' reaction when I am involved in high profile emergency situations	35. I have had to decide whether to disregard a person's wishes in order to save their life	14. I feel betrayed by tokenistic conversations about support without follow through	**≻ 42. Working during the pandemic has resulted in me having to hold more responsibility alone	29. I struggle to be polite when interacting with people who have done things that I consider to be wholeheartedly wrong
	*6. I made mistakes that led to injury or death	2. I have acted in ways that violate my own moral code or values	21. I feel guilty for times of being bored at work during COVID	** 28. I am bothered that I feel numb or disconnected in life threatening situations	18. I feel conflicted between telling the truth and protecting people from distress	41. No one helps you figure out how to manage the panic and fury of ethical decision making	**≻ 27. I am suspicious of what happens to information I share about what I witness work	
	10. I used to speak up about moral dilemmas at work, now I just get on with it	30. Working in this job ultimately puts you off people	**≺ 25. If I didn't care about my work, it would not damage me as much	34. It is painful to give up on someone when you have been fighting for them to live	43. I don't like being called a hero	19. I am angry about how my organisation scapegoats' members of staff	22. Leaving my job would reflect poorly on me as a person	
		**≺ 3. I have felt guilt for failing to save a life	36. I have complied with orders that go against every moral fibre in my body	39. I have to make decisions which could put my colleagues at risk	11. I am troubled by witnessing health inequalities at work	45. In emergency working I have experienced a conflict between the logical thing to do and the human thing to do		
			33. I have thought about leaving my job because I can't get ethical dilemmas out of my mind	20. I am concerned the general public have lost faith in my organisation	7. A lack of resource has prevented me from reducing suffering or saving a life			
			23. I am ashamed of being part of a system where people come to harm	**≺ 9. I am concerned that the culture of my profession has changed me	16. I have forgiven myself for what has happened to me or others who I work with			
				*≺ 24. I had no other choice other than to become resilient because of the dirty things I have to do				
				**≺ 32. If I doubt whether or not I did my best in an emergency situation, it will eat me up inside.				

1200 Reviewing distinguishing statements for F3 alongside comments indicates that this point of
1201 view illustrates ways that individuals attempt to protect themselves when working in
1202 emergency contexts. This includes the importance of humour as a coping mechanism.
1203 Qualitatively, a 'dark sense of humour' is discussed as both something that people bring to
1204 their work, a part of who they are, but also as a useful coping strategy that teams develop
1205 over time:

1206 *ID6: 'This [using humour] is common amongst the teams I have worked in and is part of the*
1207 *recovery process after an incident'*

1208

1209 F3 appears to represent a dilemma between feeling left alone to manage the 'panic and fury
1210 of ethical decision making' (statement 41, somewhat like me), however, at the same time
1211 feeling suspicious about what happens to information they share (statement 27, largely like
1212 me) and experiencing conversations about support as tokenistic (statement 14, somewhat
1213 like me):

1214 *ID4: 'I don't believe anyone other than those working closely [with] myself care anything*
1215 *about staff wellbeing. I make jokes.... I think [jokes] make stressful hard to deal with*
1216 *scenarios makes things light-hearted and is a coping mechanism for many'*

1217

1218 This might reflect an experience of feeling stuck and having to develop ways to cope that do
1219 not rely on support from their organisation. There is an emphasis on personal responsibility
1220 scoring higher than other factors on statement 22: 'leaving my job would reflect poorly on
1221 me as a person' and statement 13: 'I feel I would be abandoning my colleagues if I cannot go
1222 into work' as discussed in the following quotation:

1223 *ID5: 'I believe this is a feeling within the NHS as a whole. We are all aware of the immense*
1224 *stress and pressure our team is under and being unable to go to work with have a knock-on*
1225 *effect to our colleagues. Personally speaking, I went into work when feeling 'under the*
1226 *weather' as I did not want to 'let the team down', the next day I tested positive for Covid.*
1227 *Therefore, I had inadvertently put my team at risk, by not wanting to let the team down'*

1228 Developing strategies of coping alone potentially links to a wariness of the organisation,
1229 including concerns about members of staff being scapegoated by the organisation:
1230
1231 *ID9: 'too often the case whereby they are quick to take credit and even quicker to shift*
1232 *responsibility'*
1233
1234 F3 connects less with ideas of being changed or scared by the work. This point of view is
1235 distinguished from the other two factors, by significantly lower ranking of the statement
1236 regarding feeling guilt about failing to save a life:
1237
1238 *ID6: 'I believe the chances of saving life have always been improved by myself and my*
1239 *colleagues being there'*
1240
1241 This point of view also expresses that people have a clear sense not only of their moral
1242 values but feel confident to call out things they feel violate their values.

1243 *ID5: 'I would refuse to comply with orders which go against every moral fire in my body. If I*
1244 *were asked to comply with orders which I felt were morally wrong, I would not hesitate to*
1245 *question the reasoning and rationale behind these, escalating if required'*

Individuals who scored highly on F3, had on average worked in emergency contexts for the least amount of time, compared with other factors, and it also best represents the points of view of people who work on a hospital ward.

Table 3 summarises the results of the factor solution, the numbers indicate in what position the statement was placed within each composite Q-sort. Comparing the statistically distinguishing statements for three factors at the .01 level indicates that key areas of distinction are: guilt for failing to save a life (statement 3), work resulting in questioning faith (statement 8), concerned of being changed by work culture (statement 9), fearful of going to work (statement 15), feeling bothered about feeling numb or disconnected (statement 28), the impact of doubting whether or not I did my best (statement 32), making jokes about terrible situations (statement 38), and holding more responsibility alone during the pandemic (statement 42). Statements which appeared to have the most consensus across factors are: the impact of a lack of resource (statement 7), forgiving myself or forgiving others (statement 16), conflict between telling the truth versus protecting people from distress (statement 18), thinking about leaving the job due to ethical dilemmas (statement 33), and the difficulties dealing with loved ones responses when involved in high profile emergencies (statement 44). Statements of consensus may indicate aspects of shared experience, these were often statements placed in more neutral positions on the grid (a little like me, neither like/or unlike me, or a little unlike me) suggesting that these are aspects that were less defining to the ER's opinions on MI.

Table 3

The Q-set and Rankings on Each Composite Q-sort

#	Statement	F1	F2	F3
1	I have seen things that are morally wrong	3	2	1
2	I have acted in ways that violate my own moral code or values	-3	-2	-2
3	I have felt guilt for failing to save a life	1**	3**	-2**
4	I had to make decisions at times when I didn't know the right thing to do	-1*	-3**	0*
5	Seeing so much death has changed me	4	4	-2**
6	I made mistakes that led to injury or death	-4*	0**	-3*
7	A lack of resource has prevented me from reducing suffering or saving a life	1	0	1
8	Things that happen at work have led me to question my faith or belief in a higher power	-3**	2**	-2**
9	I am concerned that the culture of my profession has changed me	1**	3**	0**
10	I used to speak up about moral dilemmas at work, now I just get on with it	0**	-2	-3
11	I am troubled by witnessing health inequalities at work	0	2	1
12	I feel ashamed that as a professional I look forward to dealing with people's suffering	-2**	0	-1
13	I feel I am abandoning my colleagues when I cannot go into work	2	0**	3
14	I feel betrayed by tokenistic conversations about support and wellbeing	0**	3	2
15	I am of scared of going to work	-3*	1**	-4*
16	I have forgiven myself for what has happened to me or others whom I work with	0	-1*	1
17	I sometimes feel God is punishing me for what I've done or not done at work	-3	-4	-4
18	I feel conflicted between telling the truth and protecting people from distress	-1**	0	1
19	I am angry about how my organisation scapegoats members of staff	0*	1	2
20	I am concerned that the general public have lost faith in my profession	4**	-1	0
21	I feel guilty for times of being bored at work during COVID	-1	-3	-1
22	Leaving my job would reflect poorly on me as a person	-1**	1*	3
23	I am ashamed of being part of a system where people come to harm	-2	0	-1
24	I had no choice other than to become resilient because of the dirty things I have to do at work	2	1	0*
25	If I did not care about my work, it would not damage me as much	3	2	-1**
26	I find it hard to trust other professionals	-1	-3**	-1
27	I am suspicious of what happens to information I share about what I witness at work	-2	-2	3**
28	I am bothered that I feel numb or disconnected in life-threatening situations	2**	-4**	0**
29	I struggle to be polite when interacting with people who have done things that I consider to be wholeheartedly wrong	0**	3	4
30	Working in this job ultimately, puts you off people	3**	-2	-2
31	There are times at work I am too scared to make decisions because of the potential fallout	-2	-1	-3
32	If I doubt whether or not I did my best in a emergency situation, it will eat me up inside	2**	4**	0**
33	I have thought about leaving my job, because I can't get ethical dilemmas out of my mind	-1	-1	-1

34	It is painful to give up on someone, when you have been fighting for them to live	2	1	0
35	I have had to decide whether to disregard a person's wishes, in order to save their life	1	-2**	1
36	I have complied with orders that go against every moral fibre in my body	-4**	-1	-1
37	I will not forgive my employer for what they have made me do	-2	0**	-3
38	I make jokes about strange and terrible situations	3**	-3**	4**
39	I have to make decisions which could put my colleagues at risk	0	2*	0
40	I am angry that I have to choose between my duty of care and my personal wellbeing	-1	0	2**
41	No one helps you figure out how to manage the panic and the fury of ethical decision making	1	0*	2
42	Working during the pandemic resulted in me having to hold more risk and responsibility alone	0**	-1**	3**
43	I do not like being called a hero	1	-1**	1
44	It is hard to deal with my loved ones' responses when I am involved in high-profile emergency situations	0	1	0
45	In emergency working, I have experienced a conflict between the logical thing to do and the human thing to do	1	1	2

Participants were asked to provide details of any statements they felt were missing from the Q-set (see Table 4). Seven participants did not provide a response, three stated there were not any and one said that they did not know. The ten responses included asking further about specific mental health experiences, in particular anxiety and depression, as well as a statement about the need to hide how hard it can be. Participants requested more statements about coping and support. One participant raised that a statement was missing that explored a slow build-up of burnout or apathy over time. One participant also shared about the impact of specific decisions, such as to withdraw a life-saving intervention for an individual who would benefit overall from a peaceful and dignified death.

Table 4

What Statements Were Missing From the Q-set

ID	**What statements about Moral Injury are missing from the Q-set?**
ID12	'…We got spat at and attacked by members of the public and went home and read stories of people hating us and the government forgot us…'
ID3	'Are you or have you suffered from any conditions as a result of your work?'
ID8	'I cannot respond to criticism without fear of reprisals and accusations of being unprofessional. It is distressing to have to simply accept inaccurate accusations against police from society.'
ID16	'Covering off anxiety, imposter syndrome, or depression … questions over coping, or in particular the need to hide how hard it can be.'
ID20	'Maybe more questions about slow burnout or a general build-up of apathy that slowly affects how you view people under your care. I have also found some people in this sector will treat people differently if they don't think you are in a genuine emergency going off their own standards/definition for what an emergency is.'
ID13	'I did not feel adequately supported after a critical incident'
ID14	'What support have you received from your employer going after any of these incidents?'
ID7	'Perhaps something in relation to having to immediately deal with incidents which may seem 'trivial' after dealing with something considered very serious. For example, attending a death whereby you have had to administer CPR and then having to go directly from this to a neighbour dispute over something minor. This can be very difficult to adjust to and have patience for.'
ID10	'What makes me anxious in my work and it's moral injury dilemmas?'
ID2	'I would add that there is often moral injury in relation to saving lives in line with protocol, when it is ethical to allow natural death to take its course. Such as, instances when resuscitation is deemed appropriate, according to 'down-time' and available patient history, however the ethical decision would be to withhold or withdraw life-saving interventions for a patient who would benefit overall from a peaceful and dignified death.'

1282

1283 The by-person factor analysis, retaining a three-factor solution explained 36% of the study
1284 variance. The three distinct opinions were titled as: F1) Trying to help while feeling hated,
1285 misunderstood, and undervalued, F2) Eaten away by the work, F3) It's all on me: personal
1286 responsibility and personal protection.

1287

Discussion

Summary of Findings

The aim of the present study was to explore the viewpoints that exist on MI for ER, using Q-methodology. The factor solution was consistent with current conceptualisations of MI. F1 appears to map onto externalising emotions of betrayal and anger. The opinion relates to ER feeling their profession is misunderstood and misrepresented as well as feelings of disenfranchisement. As a result of this, an us–and-them dynamic emerges and ER may respond to the evolutionary drive to disconnect from people they perceive to be outside of their group (the public/the government). F2 likely relates to the internalising mechanisms of MI, emotions of shame and guilt and internal reflections on: 'what have I done?' and 'what has it done to me?' F3 may connect with what Shay (2014) discusses about a loss of trust in authority, as individuals express the importance of personal responsibility and personal protection and suspicion of the wider organisation. Results indicate that MI is conceptually useful and qualitatively meaningful for exploring occupational experiences for ER. Further, as different people endorsed different viewpoints, findings suggest that MI is not a unitary construct that can be universally applied in the same way to different individuals, groups, and contexts. Current measures validated for veteran and healthcare populations may fail to capture what MI means for ER. Results of this research could be used to inform the development of new questionnaires of MI with ER with utility in research and clinical practice. Findings indicate that support for ER should be sensitive to systemic factors including perceptions and relationships with the public, the media, and the organisation. For example, an us/them dynamic, may mean that it is difficult to talk openly with an external

1311 practitioner, and in addition, difficulty trusting one's organisation may create barriers for ER
1312 accessing support that is provided by or connected with their organisation. The impact of
1313 hostile public attitudes, as expressed in F1, appears to be especially important for the
1314 opinions shared by police officers. Clinical interventions therefore must involve a high
1315 degree of transparency and contracting to facilitate the development of trust and a keen-
1316 ness to get to know the individual away from the biases that may come with the uniform.
1317

1318 **Moral Injury in Emergency Responder Contexts**

1319 The impact of ethical dilemmas was not the primary focus of the opinions expressed by ER.
1320 For example, statement 31: 'there are times at work I am too scared to make decisions
1321 because of the potential fallout' was ranked at F1 -2, F2, -1 and F3, -3, with its highest
1322 ranking as: 'somewhat unlike me'. Also, statement 4: 'I had to make decisions at times when
1323 I didn't know the right thing to do' was placed at its highest in position 0 (neither like or
1324 unlike me) by F3. Further, Statement 33 'I have thought about leaving my job, because I
1325 can't get ethical dilemmas out of my mind' was ranked somewhat unlike me across all three
1326 factors. This might relate to ER working in environments where there is a need for
1327 decisiveness and perceived certainty in relation to complex and urgent situations (Lentz et
1328 al., 2021). A study by Francis and colleagues in 2018 proposes that paramedic and fire
1329 incident responders may have developed resilience to moral conflict, with less arousal (as
1330 measured by heart rate) and reported less regret, compared to an un-trained sample,
1331 following simulated moral action tasks. Further, it may reflect ER working within hierarchal
1332 organisations, such as the police, where there is an emphasis on following the orders of
1333 superiors (Lentz et al., 2021). These organisational structures may have a protective role in
1334 defending individuals from the anxiety of witnessing human suffering, ethical decision

1335 making and the consequences (Menzies, 1960). On the other hand, following the orders of
1336 others may contribute to ER developing an external locus of control, which has been
1337 associated as a risk factor for PTSD symptoms (Lentz et al., 2021). The impact of moral
1338 conflict appeared to be more central to F2, for example placing statement 32 'If I doubt
1339 whether or not I did my best in an emergency situation it will eat me up inside' in position
1340 +4 (most like me). Given that F2 was associated with people who had worked in emergency
1341 contexts for a longer time, this may demonstrate an important distinction about the
1342 cumulative impact of moral decision making and distress over the years. Three participants
1343 fed-back that statements about the mental health impacts of working in emergencies were
1344 missing from the Q-sort. As both the framework of mental health and MI appear important
1345 for ER, it would be of benefit for future research to explore how MI relates with mental
1346 health, including what is similar and what is distinct.
1347

1348 **Measuring Moral Injury**

1349 The forced Q-sort method means that participants are required to make categorical
1350 decisions about morally complex statements. This may risk a withdrawal bias whereby those
1351 who hold conflicting views simultaneously may struggle to categorise the statements and
1352 not complete the Q-sort fully, meaning these views are not represented in the findings.
1353 When the Q-sort was piloted, one individual fed-back that whilst they would have been
1354 happy to discuss their views on the statements in a qualitative discussion, they found it
1355 challenging to definitively categorise complex statements, especially those that evoke
1356 memories of morally nuanced work situations. This offers one reason why a high number of
1357 participants may have withdrawn before completing the full Q-sort. There is a wider debate
1358 within the MI literature about whether it is helpful to formally categorise MI as a syndrome

1359 (Litz & Kerig, 2019) with specific symptom criteria, like PTSD, bringing the benefit of
1360 standardisation, reliability, and validity. However, specific criteria may risk pathologising
1361 normal and adaptive responses to potentially morally injurious events and fail to account for
1362 a variety of individual experience. Results suggest that participants view a connection
1363 between PTSD and MI, with statement 5 ‘seeing so much death has changed me’ being
1364 placed in the ‘most like me’ category for both F1 and F2. The relationship between PTSD and
1365 MI remains unclear in the literature; Jones argues that exposure to a traumatic event is
1366 central to PTSD but may not be required for MI, which is more defined by the evaluation of
1367 the self (2020). However, the salience of the statement ‘seeing so much death has changed
1368 me’ for F1 and F2 indicates that for the ER, MI contains elements of both the exposure
1369 ‘seeing so much death’ and the impact on the self ‘has changed me’. The difficulties defining
1370 and measuring MI bring challenges for the proposed clinical implications for MI. It brings
1371 into question whether it is the remit of clinical psychology to offer ‘treatments’ for ethical
1372 dilemmas, or if MI, especially in the absence of mental health difficulties such as PTSD is
1373 better served by spirituality or moral philosophy (Jones, 2020).
1374
1375 **Survivor Bias**
1376 It is of benefit to interpret the findings through the lens of survivor bias (Hines et al., 2021).
1377 The inclusion criteria required participants to have worked in emergency contexts within the
1378 last 12 months in the UK. The rationale for this was that bringing together views of MI for
1379 those who are currently working, compared to those who are reflecting on their previous
1380 work, may confuse the results. However, this means that the voices heard in this study are
1381 those who have found a way to keep working in emergency contexts. This is consistent with
1382 the finding that statement 33 ‘I have thought about leaving my job, because I can't get

ethical dilemmas out of my mind' was the only statement ranked in the same position (somewhat unlike me) across all three factors. What this research fails to explore are the opinions of those who arguably may be the most impacted by potentially morally injurious events at work, those who could not continue in the work. Thus, there might be key views of MI for ER that could not be captured by this study, including the most profound and impactful experiences of MI. In a study exploring healthcare workers and First Responders working during the COVID-19 pandemic results indicated that PTSD symptom severity was significantly related to the likelihood of leaving one's current field, trouble completing tasks and thoughts of self-harm or suicide. Demoralisation was also significantly related to the likelihood of leaving one's field, other than for emergency medical service workers, where demoralisation was significantly related to occupational functioning, but not the likelihood of leaving (Hendrickson et al., 2022).

The nature of the Q-sort means that results are limited by the coverage and quality of the statements generated within the Q-set. For this reason, a significant period of time was devoted to developing the Q-set. Whilst efforts were made to consult with individuals with a variety of experience working in emergency contexts, including someone who no longer worked in emergencies, it would have been of benefit to consult with someone who had left their work due to the impact on their wellbeing. It would be of benefit for future research to explore MI for those who have not been able to carry on with their job. This may shed light on people's experiences of seeking support inside or outside of their organisation and help to identify the gaps in provision and the barriers to access. Understanding the specific support needs of MI is especially important for ER who may not have the opportunity to

1406 disconnect from what happens at work compared to a veteran at the end of a tour. ER may
1407 live in the communities that they work in; the paramedic may walk down the same road
1408 with their children where it wasn't possible to save a patient the night before. Clinical
1409 interventions therefore need to be responsive and sensitive to the factors that help keep
1410 people in their jobs, such as humour (statement 38), and to the things that have made it
1411 difficult to carry on.

1412

1413 **Strength and Limitations**

1414 The research findings should be interpreted in the context of the following considerations.
1415 Firstly, the factor solution only explained 36% of the variance. This may be due to a
1416 relatively heterogeneous sample and could be limited by the sample size of 21. Further,
1417 participants had to self-screen to confirm that they had worked in emergency contexts
1418 within the last 12 months. Whilst the researcher could not verify participants work status,
1419 there was no reason to doubt participants' self-assessment. Although there is evidence to
1420 support using an online Q-sort, conducting Q-sorts face to face, in conjunction with an
1421 interviewer is considered the gold standard (Watts & Stenner, 2012). Due to social
1422 restrictions because of COVID-19, it was not possible to complete the Q-sorts in person for
1423 this study. However, further steps could have been taken to emulate a face-to-face
1424 experience, such as the researcher conducting the Q-sorts over a video call. Although, this
1425 may have had the unintended consequence of adding an extra barrier to recruitment,
1426 especially with the feedback that emailing the researcher posed a threat to anonymity.
1427 Further, the strength of a Qualtrics Q-sort method is that it may reduce the impact of
1428 response bias or social desirability effects, especially given a topic like MI that explores

ethical dilemmas, loss of trust and emotions of shame and guilt. The online Q-sort also enabled responses to be collected from all over the UK, in a variety of urban and rural settings. Qualitative feedback from participants identified challenges to the procedure, when asked how they found the process of the Q-sort, 11 participants reported that completing the Q-sort was difficult, with one further participant explaining that they did not feel that the fixed nature of the Q-sort enabled an accurate representation of their opinion on the statements. It is a known criticism of a forced Q-sort approach, that participants may feel restricted about where they can place certain statements (Watts & Stenner, 2012). However, the strength of this method is that it encourages participants to rank each statement in relation to other statements and gives space for participants to express their views with qualitative feedback alongside the Q-sort (2012). Q-methodology requires a purposive sample to identify diverse opinions. The following steps were taken to gather diverse points of view, a) recruiting from different professional groups b) targeting a variety of social media websites, with different user bases c) snowballing recruitment, by asking participants to share the study link with anyone they knew who thought very differently about this than them. However, if time allowed further steps could have been taken to achieve purposive sampling, for example the completion of an initial screening measure and then contacting people who had unique viewpoints with an invitation to take part in the Q-sort.

Clinical Implications

Given that MI can result in emotional, social, spiritual, and existential distress, it follows that interventions and the clinicians who offer them, must be equipped to sufficiently address

these components. Lintz and colleagues (2021) suggest MI interventions borrow from the posttraumatic growth literature and provide: ‘specific mental, emotional, and spiritual tools to address intense emotions, resolve internal dissonance, integrate fractured belief systems, rebuild trust and social connections, and engage in forgiveness and compassion practices’ (p.11)

The impact of MI on social isolation is well established in the literature (Griffin et al., 2019) and in different ways is woven into each factor. F1 discusses the experience of being ‘put off people’ at work and qualitative comments indicate the knock off effects for social connection: ID7 ‘*…my patience for wider social engagement is reduced in my personal life’.* F3 highlights the pressure of dealing with situations alone, alongside the impact of losing trust in an organisation. Whilst F2 scores lower than other factors on: ‘I find it hard to trust other professionals’ and ‘no one helps you deal with the panic and fury of ethical decision making’ some of the quotations indicate that overtime ER may have developed increased reluctance to connect with others: *ID17: ‘I used to feel talking to people was helpful but now it is just an unwanted task’.* Given the impact of MI on relational factors, including isolation and trust, individually focused interventions may not offer sufficient healing from MI. Group interventions may offer opportunities to experience that one is not alone; Shay (2010) talks about offering space for groups of military veterans to talk openly about their experiences of MI. Further, whilst individual psychological work may enable one to find increased compassion and forgiveness for the self, it may reinforce the ‘it’s all on me’ narrative, that MI is the individual’s problem and may not be sufficiently able to attend to ruptures in trust. On the other hand aspects of the ‘it’s all on me’ mentality might be appealing to some

1475 individuals, as it may also be associated with the power of personal contributions as well as
1476 the challenges and satisfaction of the work. Litam and Balkin (2021) propose the
1477 implementation of Schwartz rounds to provide a structured and compassionate space for
1478 healthcare workers at risk of MI to reflect on the emotional impact of their work. Schwartz
1479 rounds have been experienced positively by samples of clinical and non-clinical healthcare
1480 staff (Flanagan et al., 2020). The application of a Schwartz rounds approach for ER would
1481 have the advantage that individuals can receive support from others who may have lived
1482 through similar things, offering connection, normalisation, and validation, and thus
1483 providing important antidotes to shame. Group support should be developed and
1484 implemented in collaboration with that specific organisational group, gathering qualitative
1485 data from staff about facilitators and barriers to engagement, as the centrality of shame and
1486 loss of trust in MI and may mean it is particularly difficult for individuals to talk openly in
1487 groups. Qualitative research regarding the implementation of a mental health workshop to
1488 reduce stigma and increase help seeking with Canadian police officers found that
1489 organisational cultural uptake was central to the program being able to effect change
1490 (Knaak et al., 2019).

1491

1492 A supportive workplace environment has been associated with lower MI in a sample of
1493 healthcare professionals (Hines et al., 2021). Given the point of view expressed in F3 about
1494 an emphasis on personal protection and not feeling looked after by the organisation, this
1495 raises important clinical implications about what constitutes a 'trustworthy clinical
1496 community' (Shay, 2014 p. 182) and what can be done to rebuild trust, once it is damaged.
1497 Two ER reported that this Q-set was missing statements about support, and it raises the

1498 question of how best to support and who is best to offer this. This researcher questions how
1499 equipped is Clinical Psychology to effectively attend to moral dilemmas, compared with
1500 religion, spirituality or moral philosophy? However, Clinical Psychologists are well placed to
1501 offer their expertise in formulation and group processes to facilitate relational repair, albeit
1502 a challenging task, whilst navigating the traps of tokenism in the context of limited resource.
1503 Psychodynamic consultation may enable workers to reflect on the organisational defences
1504 that unconsciously develop to manage the emotional impact of their work (Obholzer &
1505 Roberts, 1994). With this awareness teams can then reflect on which defences are
1506 protective, such as a 'dark sense of humour', and which may be harmful, such as: 'the need
1507 to hide how hard it can be' (ID16).

1508

1509 Distinct packages of support may be indicated for those who align with each of the three
1510 viewpoints of MI. Individuals who scored highly on F1 spoke about the centrality of feeling
1511 hated, misunderstood, and undervalued. For MI with this group, it would be of benefit to
1512 consider what facilitates individuals feeling valued, recognised, and appreciated at work?
1513 How can organisational processes, including feedback between colleagues and superiors
1514 provide opportunities for hard work to be recognised and mistakes and moral dilemmas be
1515 understood in the context of employee values and intentions? Feeling hated by the public
1516 suggests a need to address the stigma that might come with a profession, which may be
1517 reinforced by a uniform which communicates a professional group identity perhaps making
1518 it harder for members of the public to hold in mind the individual worker. It is very
1519 challenging to identify clear clinical implications for F1, due to the extent of complexity in
1520 attending to societal attitudes (for example of the police) including the role of historical,
1521 political, and financial influences. Whilst clinical implications are more straightforward to

1522 identify for F2 and F3 further research is needed to understand what systemic or social
1523 action interventions might help to question the powerful us/them dynamic that is discussed
1524 in F1, and what the role of clinical psychology is within that.

1525

1526 ER who align with F2 and feel eaten away by the work, might benefit from individual
1527 packages of support, as F2 discusses the personal impact of emergency working and what
1528 this means for a person's identity and sense of self. Given that F2 had higher associations
1529 with guilt and shame and difficulty forgiving the self and others compared with the other
1530 factors, those who score highly on F2 may benefit from psychological approaches that work
1531 with guilt and shame such as Compassion Focused Therapy (Gilbert, 2010). F2 is associated
1532 with feeling changed by the work, therefore those who align with F2 could benefit from
1533 psychological exploration into how professional experience has influenced the self over the
1534 course of their career. This may enable an individual to identify what has been lost (eaten
1535 away) consider which loses represent helpful pruning or refining of a coping strategy and
1536 which loses are sadly missed. This may offer areas for that individual to focus on for
1537 personal or professional regeneration. For example, a nurse may identify that a loss of
1538 sensitivity to distress has been helpful in their work in urgent care, however they would like
1539 to regenerate this aspect of themselves in their home life. In this way, clinical implications
1540 for F2 may connect with a MI equivalent of post-traumatic growth, which is currently a
1541 relatively unexplored area of research.

1542

1543 F3 relates to what Shay (2016) discusses about a loss of trust in authority that comes with
1544 MI. Whist an 'it's all on me' perspective may provide powerful motivations and enable an

1545 individual to recognise and celebrate their contributions at work, it is also associated with
1546 the perceived need for self-reliance and little trust to seek support from the organisation.
1547 An over-inflation of one's own role, in context of being up against powerful forces of death,
1548 suffering, loss, harm may put these individuals at an increased risk of burnout or not being
1549 able to stay in the work. This may be particularly important considering those who aligned
1550 with F3 were those who had worked in emergencies for the least amount of time. Clinical
1551 implications for those who align with F3, may include the need to attend to ruptures and
1552 promote repairs between the individual and the organisation. Those who relate to F3 in
1553 their experience may not benefit from individual interventions, but instead need to be part
1554 of relational and systemic interventions such reflective practice, group supervision or
1555 Schwartz rounds that brings staff together and might be able offer ways to rebuild the trust
1556 that has been violated.

1557

1558 **Research Implications**

1559 Findings indicate that experiences of MI might be distinct for different ER groups. It may be
1560 beneficial to develop organisation specific questionnaires, such as for police and for
1561 firefighters to fully capture experiences. Questionnaires can then be used within future
1562 research to explore ER specific MI with other mechanisms of interest, such as mental health
1563 experiences. Of particular benefit would be research to better understand how MI and PTSD
1564 overlap for ER and where they are distinct. Questionnaires can also be used to measure the
1565 effectiveness of clinical interventions, for example, to examine whether the implementation
1566 of a Schwartz round informed group for Police results in reduced reported MI. The
1567 development of questionnaires of ER for MI would benefit from the inclusion of items that

1568 further explore the relationship between the profession, the public and (social) media.
1569 Items on the cumulative impact of working in emergencies over the years would also be of
1570 benefit. Whilst research has indicated that narcissism, psychopathy, and Machiavellianism
1571 are associated with MI for police officers (Papazoglou et al., 2019) future research may also
1572 wish to further understand the relationship between personality characteristics, MI in ER.
1573 For example, is it that those who chose to work in emergency situations would score higher
1574 on traits such as certainty and self-reliance, or is this a consequence of how the individual is
1575 altered by their work? The current research is limited by survivor bias and future research
1576 for MI in ER should sample individuals who have left their role because of the impact on
1577 their wellbeing. Qualitative research exploring the factors that enhance support and trust at
1578 work may be a helpful next step to understand how to best support ER experiencing MI.
1579

1580 **Conclusion**

1581 MI is a conceptually useful and qualitatively meaningful framework to explore ER
1582 experiences. ER hold distinct viewpoints that map onto theoretical positions of MI, including
1583 loss of trust in others (F1), loss of trust in the self (F2) and loss of trust in authority (F3).
1584 Therefore, ER who align with different views, will likely need different support in response
1585 to MI, a ‘one size fits all’ approach is likely to fail as it misses the different needs expressed
1586 by the three different groups. The field would benefit from future research which aims to
1587 further refine the categories of MI for ER, for example through questionnaire development.
1588 What is striking, when considering these results overall, is that they indicate that healing
1589 from MI for ER may be less about individuals needing to develop more effective personal
1590 coping strategies. Instead, to address the moral wounds that ER may experience,

1591 approaches should be relational, systemic and pay careful attention to the powerful

1592 narratives of ER in the media. This raises the question that if trust is the necessity that is lost

1593 in MI, what can be done to repair and rebuild trust with the self, within work cultures,

1594 organisations, professions, communities and with the public.

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Appendices

1) Literature Review, Screening Tool for Inclusion and Exclusion

Date:		
Paper:		
Domain	**Include + rationale**	**Exclude + rationale**
Population: *Adults who work in emergency situations*	*Fire/Police/Paramedic/A&E/urgent care/'front-line workers during covid/ students (as long as they have completed or are in the process of completing a placement in emergency contexts.*	*Prison/military/veteran populations only. Populations of non-working individuals (such as members of the public who have responded to an emergency).*
Design: *Quantitative studies*	*Cross sectional/ Intervention (randomised or non-randomised).*	*Qualitative/ Case studies/ Systematic reviews/ Meta analysis*
Mechanism: *Exploring either or both (self) forgiveness/ (self)compassion. No specific measures required.*	*Psychological interventions (e.g., mindfulness interventions), will be included if the paper demonstrates that there is a significant component that focuses on the processes of compassion and/or forgiveness. E.g., 1 session in a course focusing on self-compassion. For cross sectional studies, mechanisms of (self)compassion/ (self)forgiveness should be compared with mental health symptoms of depression/anxiety/ PTSD.*	*Related concepts only, e.g., compassion fatigue/ compassion satisfaction.*
Outcomes: *Mental health experiences of depression, anxiety, PTSD*	*Outcomes can be part of dedicated scales (e.g., BDI) or as part of more general measures (e.g., core) Outcomes must be measured quantitatively. For cross sectional studies, measures of (self) compassion/ (self)forgiveness must be compared with (or used to predict) mental health symptoms.*	*Related outcomes, such as secondary trauma, burnout job satisfaction, Professional quality of life, job retention. Studies that report on (self)compassion/ (self)forgiveness and mental health symptoms, but there is no comparison.*
Publication type *Peer reviewed article or grey literature English Language*	*Grey literature included (such as dissertations) if article describes a piece of original research*	*Study protocol papers only, review articles, book chapters.*
Decision:		

2) Literature Review, Mixed Method Appraisal Tool (Hong, et al., 2018).

Part I: Mixed Methods Appraisal Tool (MMAT), version 2018

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?				
	S2. Do the collected data allow to address the research questions?				
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non-randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

3) Letter Confirming Ethical Approval

Central University Research Ethics Committee A

25 January 2021

Dear Dr Krahe

I am pleased to inform you that your application for research ethics approval has been approved. Application details and conditions of approval can be found below. Appendix A contains a list of documents approved by the Committee.

Application Details

Reference:	8422
Project Title:	Exploring The Concept of Moral Injury with Emergency Responders
Principal Investigator/Supervisor:	Dr Charlotte Krahe
Co-Investigator(s):	Miss Verity Smith, Dr Luna Centifanti
Lead Student Investigator:	-
Department:	Psychological Sciences
Approval Date:	25/01/2021
Approval Expiry Date:	Five years from the approval date listed above

The application was **APPROVED** subject to the following conditions:

Conditions of approval

Please note: this approval is subject to the University's research restrictions during the pandemic, as laid out on the research ethics webpages. Therefore, wherever possible, research should be conducted via remote means which avoid the need for face-to-face contact with human participants during the pandemic. The process for requesting an exemption to these restrictions is described on the research ethics webpages.

- All serious adverse events must be reported to the Committee (ethics@liverpool.ac.uk) in accordance with the procedure for reporting adverse events.
- If you wish to extend the duration of the study beyond the research ethics approval expiry date listed above, a new application should be submitted.
- If you wish to make an amendment to the study, please create and submit an amendment form using the research ethics system.
- If the named Principal Investigator or Supervisor changes, or leaves the employment of the University during the course of this approval, the approval will lapse. Therefore it will be necessary to create and submit an amendment form within the research ethics system.
- It is the responsibility of the Principal Investigator/Supervisor to inform all the investigators of the terms of the approval.

Kind regards,

Central University Research Ethics Committee A

ethics@liverpool.ac.uk

CURECA

Page 1 of 2

Appendix - Approved Documents

(Relevant only to amendments involving changes to the study documentation)

The final document set reviewed and approved by the committee is listed below:

Document Type	File Name	Date	Version
Study Proposal/Protocol	Verity_Smith_Moral_Injury_Proposal_	24/08/2020	2
Advertisement	research_advert	20/11/2020	1
Questionnaire	Q_sort_Questionnaire_form	04/12/2020	2
Participant Information Sheet	PIS_v2	15/01/2021	2
Participant Consent Form	Participant consent form	15/01/2021	1
Debriefing Material	debrief information	15/01/2021	2

4) Letter From the Ethics Committee Confirming Approval of the Q-set

Central University Research Ethics Committee A

14 October 2021

Dear Dr Krahe,

I am pleased to inform you that the amendment to your study has been approved. Amendment details and conditions of approval can be found below. If applicable, Appendix A contains a list of documents approved by the Committee.

Amendment details

Reference:	8422 (amendment)
Project Title:	Exploring The Concept of Moral Injury with Emergency Responders
Principal Investigator:	Dr Charlotte Krahe
Co-Investigator(s):	Miss Verity Smith, Dr Luna Centifanti
Student Investigator(s):	-
Department:	Psychological Sciences
Approval Date:	14/10/2021

The amendment was **APPROVED** subject to the following conditions:

Conditions of approval

Please note: this approval is subject to the University's research restrictions during the pandemic, as laid out on the research ethics webpages. Therefore, wherever possible, research should be conducted via remote means which avoid the need for face-to-face contact with human participants during the pandemic. The process for requesting an exemption to these restrictions is described on the research ethics webpages.

- All serious adverse events must be reported to the Committee (ethics@liv.ac.uk) in accordance with the procedure for reporting adverse events.
- If it is proposed to make further amendments to the study, please create and submit an amendment form within the research ethics system.
- It is the responsibility of the Principal Investigator or Supervisor to inform all the investigators of the terms of the approval.

Kind regards,

Central University Research Ethics Committee A

ethics@liverpool.ac.uk

CUREC-A

Page 1 of 2

Appendix - Approved documents

If applicable, the final document set reviewed and approved by the committee is listed below:

Document Type	File Name	Date	Version
Default	Final_Q_set_08.10.21	08/10/2021	1

5) Participant Information Sheet

Title of Study: Exploring the concept of Moral Injury with Emergency Responders

Version 3: Date: 19.10.2021

1. Invitation:

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Thank you for reading this.

2. What is the purpose of the study?

This research aims to enhance understanding of Moral Injury with Emergency Responders. As a society, we rely on Emergency Responders at times of high stakes and high risk to promote safety and human life. Moral Injury is a term used to help understand the impact on people when they face ethical dilemmas in the context of death, destruction and suffering. Moral injury is a way of describing distress, however, it is not a mental health diagnosis. We know there are expectations for Emergency Responders to make decisions in life-threatening situations, with limited resource, to attempt to deal with distressing and difficult things they witness at work and come back for their next shift. Moral injury has been explored for lots of different professionals, this research is interested in specifically what it is like for those working in Emergency situations.

3. Why have I been chosen to take part?

You have been asked to take part as someone who works as an Emergency Responder in the UK. Between 20-30 Emergency Responders will be taking part in the research.

UNIVERSITY OF LIVERPOOL

4. Do I have to take part?

You do not have to take part. Participation is voluntary and you are free to withdraw your participation at any time, without explanation, and without incurring a disadvantage. It will not be possible to withdraw your data once you have submitted it. You will be asked to confirm you are happy to submit your data at the end of the questionnaire.

5. What will happen if I take part?

You will be first asked if you would like to consent to take part. If so, you will click to proceed. You will be asked three screening questions to confirm that you are eligible to take part in the study. After this you will be asked to provide brief information about yourself, including your age, gender, a description of the sector you work in, and how long you have worked in emergency situations for. No one will be able to identify you from these questions. Next you will be presented with a number of statements about Moral Injury. You will be asked to organise these statements into three boxes, agree, disagree and neither agree/disagree. You will be asked to rank each statement by the extent to which you agree with them. You will then be asked to share comments. We encourage you to discuss themes and ideas in a general way and ask that you do not provide any details of specific individuals, organisations or NHS trusts. Providing specific details that raise concerns about your safety or the safety of someone else may result in the research team having to share that information with the relevant organisation. You can take as long as you need to complete the research. We expect that participation will take no longer than 1 hour.

6. How will my data be used?

We will be using analysed data to explore the key aspects of Moral Injury for Emergency Responders. Comments provided may be used as quotes in the write up findings, please do not include anything you do not wish to be used in this way. Any identifiable information from comments, including the location of where you work, or the service you work for, will be removed.

The University processes personal data as part of its research and teaching activities in accordance with the lawful basis of 'public task', and in accordance with the University's purpose of "advancing education, learning and research for the public benefit. Under UK data protection legislation, the University acts as the Data Controller for personal data collected as part of the University's research. Dr Charlotte Krahé acts as the Data Processor for this study, and any queries relating to the handling of your personal data can be sent to Charlotte.Krahe@liverpool.ac.uk. Further information on how your data will be used can be found in the table below.

How will my data be collected?	Your data will be collected online
How will my data be stored?	All data will be anonymised and stored electronically.
How long will my data be stored for?	Data will be stored for a minimum of 10 years, in accordance with The University of Liverpool polices.
What measures are in place to protect the security and confidentiality of my data?	All data will be anonymised. Email addresses will be stored separately from the responses to the questionnaire.
Will my data be anonymised?	Yes
How will my data be used?	Your data will be used for the purposes of this research only. Results will be written up for thesis submission and publication.
Who will have access to my data?	Data will be accessible only the research team (details at the end of this information). Data will only be passed on in the event of a required audit or complaint process, in line with University of Liverpool regulations.
Will my data be archived for use in other research projects in the future?	Data will be kept for a minimum of 10 years. Your data will not be used for any other research purposes.
How will my data be destroyed?	Following competition of the research, all data will be handed over to Dr Charlotte Krahé as data processor. Data will be kept for a minimum of 10 years before being destroyed.

7. Expenses and / or payments

At the end of the research you will be asked if you would like to opt into a prize draw, to win £30 Amazon voucher. If you chose to opt in, you will be asked to provide an email address.

8. Are there any risks in taking part?

Some people may find thinking about personal experiences of Moral Injury difficult or distressing. To help you decide, here is an example statement: How much to do you agree with the following … 'a lack of resource has prevented me from reducing suffering or saving a life'. We encourage participants to find a suitable time to complete the research, perhaps where it is possible to seek support from loved ones or colleagues afterwards if needed.

9. Are there any benefits in taking part?

Some people can find it helpful to talk about their experiences. Some people find it helpful to recognise that their emotions and experiences are shared by lots of people. By participating in this research, we hope you will be contributing to important evidence, that could go on to inform how psychological support is understood for Emergency Responders in the future.

10. What will happen to the results of the study?

The results will be analysed and written up for as a thesis, for publication in an academic paper and presented as an oral presentation at The University of Liverpool. The results will be made available to participants. If you would like to hear about the results of the study, you will need to provide an email address.

11. What will happen if I want to stop taking part?

You can withdraw participation in the study at any time, without explanation. At the end of the study you will be asked if you are happy to submit your responses. As all data is anonymised, it will not be possible withdraw your data once it has been submitted.

12. Who can I contact if I have further questions?

The research is being conducted by the school of Clinical Psychology at The University of Liverpool.

The research team is:

Verity Smith	Trainee Clinical Psychologist	Verity.smith@liverpool.ac.uk
Dr Charlotte Krahé	Primary Supervisor	Charlotte.Krahe@liverpool.ac.uk
Dr Esther Murray	Secondary Supervisor	E.Murray@qmul.ac.uk

6) Qualtrics Consent Screen

	Please tick box
1. I confirm that I have read and have understood the information sheet dated [19.10.21] for the above study, or it has been read to me. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	○
2. I understand that taking part in the study involves an online questionnaire.	○
3. I understand that my participation is voluntary and that I am free to stop taking part and can withdraw from the study at any time without giving any reason and without my rights being affected. In addition, I understand that I am free to decline to answer any particular question or questions.	○
4. I understand that I can ask for access to the information I provide and I can request the destruction of that information if I wish at any time prior to submission. I understand that following submitting my data I will no longer be able to request access to or withdrawal of the information I provide	○
5. I understand that the information I provide will be held securely and in line with data protection requirements at the University of Liverpool until it is fully anonymised and then deposited to Dr Charlotte Krahé as the data custodian.	○

Optional use of direct quotes

	Yes	No
6. It is ok to use anonymised comments I have provided as quotes in the write up of research, I understand that any identifiable information, including details of where I work will be removed.	○	○

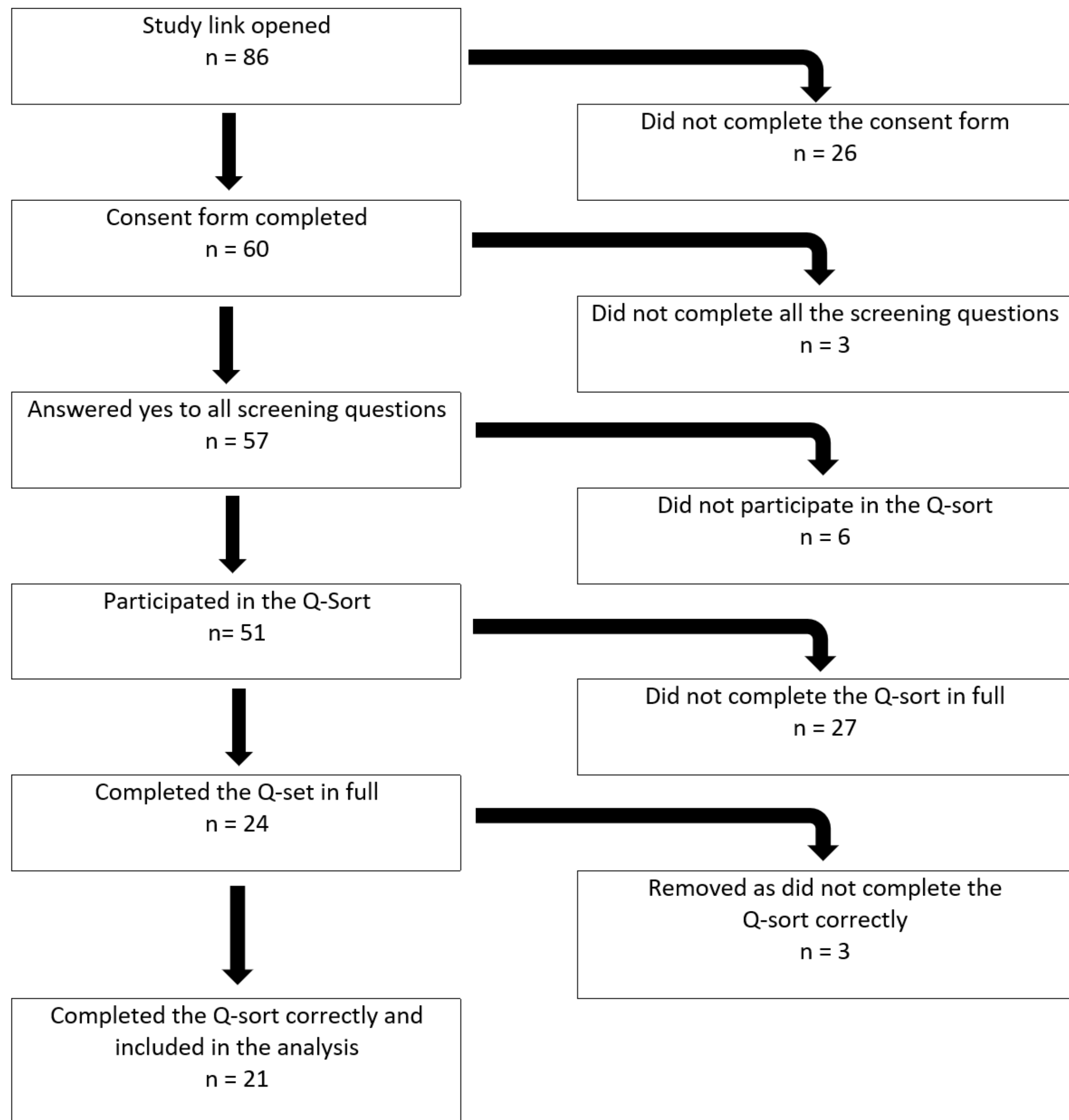
Consent to participate

	Please tick box
7. I agree to take part in the above study.	○

<< >>

Remember, if you need someone to talk to, you can call The Samaritans anytime for free on 116 123, or text SHOUT to 85258.

7) Flow Chart of Participants



8) Author Guidelines for Publication of the Literature Review Chapter: Clinical Psychology and Psychotherapy

Full Guidelines accessible from: https://onlinelibrary.wiley.com/page/journal/10990879/homepage/forauthors.html?9

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Beers, S. R. , & De Bellis, M. D. (2002). Neuropsychological function in children with maltreatment-related posttraumatic stress disorder. *The American Journal of Psychiatry, 159,* 483–486. doi: 10.1176/appi.ajp.159.3.483

Book

Bradley-Johnson, S. (1994). *Psychoeducational assessment of students who are visually impaired or blind: Infancy through high school* (2nd ed.). Austin, TX: Pro-ed.

Internet Document

Norton, R. (2006, November 4). How to train a cat to operate a light switch [Video file]. Retrieved from *http://www.youtube.com/watch?v=Vja83KLQXZs*

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- Abstract
- Up to seven keywords
- Main body, formatted as:
    - Method
        - Participants
        - Procedure
        - Measures
        - Data Analysis
    - Results
- References
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- Figure legends: Legends should be supplied as a complete list in the text. Figures should be uploaded as separate files (see below).

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