Exploring the Role of Self-Compassion in Promoting Resilience and Well-Being Among Rescue Workers

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Abstract

One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.

Two to three sentences of **more detailed background**, comprehensible to scientists in related disciplines.

One sentence clearly stating the **general problem** being addressed by this particular study.

One sentence summarizing the main result (with the words "**here we show**" or their equivalent).

Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.

One or two sentences to put the results into a more **general context**.

Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline.

Keywords: self-compassion; individual differences; rescue workers; protective factors; risk factors

Word count: X

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Introduction

Rescue workers (RWs) and healthcare professionals are repeatedly exposed to traumatic events and to the emotional distress of others, a reality that puts them at heightened risk for conditions such as burnout (Chatzea et al., 2018), compassion fatigue (Joinson, 1992), and even Post-Traumatic Stress Disorder (PTSD) (Tahernejad et al., 2023). Given these occupational vulnerabilities, understanding and promoting factors that fortify their resilience becomes a matter of critical importance (Mao, Hu, et al., 2022).

Resilience, understood as the capacity for positive adaptation in the midst of significant challenges, is influenced by a nuanced interplay between protective and risk factors. Protective factors serve to mitigate the adverse effects of stressful situations, whereas risk factors increase the probability of negative, maladaptive outcomes. In professions like rescue work, resilience is not merely a desirable trait but a critical asset, as it enhances an individual's capacity for self-preservation and effective coping during disruptive, traumatic, or potentially life-altering events (Paton et al., 2000).

This study is designed to delve into the relationship between individual differences in the protective and risk factors among rescue workers and their inclination to rely on self-compassion as a coping mechanism. Specifically, the study seeks to

1. identify distinct individual differences "profiles" based on combinations of protective and risk factors and examine their respective associations with varying levels of self-compassion, and

2. determine which facets of self-compassion are predominantly linked to maladaptive resilience profiles in rescue workers.

Individual differences in protective and vulnerability factors

The growing literature on the resilience of emergency responders underscores the complex interplay between various protective and vulnerability factors that influence their post-traumatic responses (Alexander & Klein, 2009; Scuri et al., 2019). Such factors span multiple dimensions, each exerting a unique influence on psychological resilience and overall well-being (Ludick & Figley, 2017). Factors like robust physical health, specific demographic features, and positive personality traits, such as optimism, serve to augment resilience. Conversely, factors like youth, being female, or a prior history of trauma can attenuate it. Moreover, the employment of adaptive coping strategies and strong social support networks enhances resilience, while maladaptive coping mechanisms and emotional volatility undermine it. Specialized training programs have also been shown to bolster resilience among emergency responders (Mao, Fung, et al., 2022).

Despite the critical nature of these factors, self-compassion remains a conspicuously understudied dimension with significant potential to influence resilience. The concept of the "self" has emerged as an increasingly central factor in individual differences related to stress management (Beck, 2016). Self-compassion, defined by a nurturing relationship with oneself, not only elevates mental well-being but also confers a protective shield against psychological disorders such as PTSD (MacBeth & Gumley, 2012; Wilson et al., 2019; Wong & Yeung, 2017).

The Self-Compassion Scale (SCS) is the standard tool for measuring self-compassion and assesses six dimensions. Three of these dimensions—Self-kindness (SK), Common Humanity (CH), and Mindfulness (MI)—examine the active elements of self-compassion, which include benevolent self-regard, the recognition that suffering is a shared human experience, and the mindful awareness of one's distressing thoughts and emotions (Neff, 2022). The remaining dimensions explore barriers to self-compassion, such as self-critical attitudes (Self-judgment; SJ), social isolation (Isolation; IS), and excessive emotional

82   involvement in one's struggles (Overidentification; OI).

83   Emerging evidence strongly suggests an inverse correlation between stress and
84   self-compassion, as well as a direct relationship between self-compassion and reduced
85   occupational burnout (Neff, 2023). In this context, specialized research has begun to explore
86   the role of self-compassion in the psychological profiles of emergency responders. For
87   instance, Pietrantoni and Prati (2008) found minimal levels of compassion fatigue and
88   burnout but high job satisfaction among a sample of emergency personnel. Studies like
89   Lowery and Cassidy (2022) have extended these insights to a broader range of first
90   responders, including police officers and firefighters, and highlighted self-compassion as a
91   principal determinant of well-being. Additionally, investigations focusing on firefighters
92   specifically, such as Lv et al. (2023), have identified self-compassion and maladaptive coping
93   as mediating variables between stress and occupational burnout.

94   In light of this evidence, it is reasonable to hypothesize that self-compassion could
95   play a pivotal role in enhancing resilience across diverse professional groups, including
96   emergency responders. Yet, there is a notable gap in the existing literature concerning the
97   influence of individual differences on this relationship. Specifically, it is unclear whether
98   emergency responders who demonstrate adaptive resilience patterns are more likely to utilize
99   self-compassion as a coping strategy compared to those with maladaptive resilience patterns.
100 To address this gap, the current study aims to uncover the unique individual differences that
101 define the interplay between protective and vulnerability factors in emergency responders,
102 focusing particularly on their likelihood of employing self-compassion as a coping strategy.
103 Our study has two primary objectives: (1) to delineate unique individual difference "profiles"
104 based on distinct configurations of protective and vulnerability factors, and examine their
105 associations with various levels of self-compassion; and (2) to ascertain which specific
106 dimensions of self-compassion are predominantly associated with maladaptive resilience
107 profiles.

Individual Differences in Resilience Among Emergency Responders

To identify distinct resilience profiles among emergency responders who vary in their ability to cope with the vicarious trauma inherent in their profession (Palm et al., 2004), we evaluated multiple dimensions of individual differences.

Personality traits

Personality traits not only serve as integral components of resilience but also as influential predictors for the likelihood of experiencing burnout, linking both external and internal factors in understanding psychological well-being (Mao, Hu, et al., 2022; Swider & Zimmerman, 2010). Neuroticism stands out as a particularly strong predictor of burnout and also plays a crucial role in defining anxiety-related coping styles such as vigilance and cognitive avoidance (Bianchi, 2018; Jung et al., 2022). This trait is noteworthy for its double-edged impact: while heightened neuroticism makes individuals more vulnerable to stress, lower levels of neuroticism can act as protective factors against PTSD, especially among emergency medical personnel (Mirhaghi et al., 2016).

On the other hand, lower levels of extraversion and conscientiousness have been correlated with maladaptive coping strategies and diminished psychological well-being. Specifically, individuals low in extraversion tend to focus on the adverse aspects of challenging situations and are more likely to engage in emotion-focused coping (Connor-Smith & Flachsbart, 2007). Low conscientiousness has been associated with heightened levels of depersonalization and reduced personal accomplishment (Kokkinos, 2007). Within the context of rescue workers, lower extraversion and higher introversion have been significantly correlated with an increased risk of psychological disorders and PTSD, respectively (Liao et al., 2002; Mao, Hu, et al., 2022; Naz et al., 2010).

Conversely, higher levels of agreeableness are linked with effective interpersonal relationships, emotional intelligence, and consequently, reduced levels of burnout (Angelini,

2023). However, the trait of openness remains an enigma, with the empirical evidence yet to establish a clear relationship between this personality dimension and burnout susceptibility (Angelini, 2023; Răducu & Stănculescu, 2022).

Given these interwoven relationships among personality traits, coping strategies, and psychological outcomes, it can be posited that a complex interplay of high neuroticism, and low extraversion, agreeableness, and conscientiousness—though not necessarily openness—may serve as a composite "personality marker" for rescue workers who struggle to effectively marshal internal resources and build resilience against external stressors.

Coping strategies

Coping encompasses the cognitive and behavioral initiatives that individuals employ to navigate environmental stressors, as outlined by Lazarus and Folkman (1984). Two primary categories of coping strategies have been recognized: adaptive strategies, which include problem-solving and cognitive reappraisal, and maladaptive strategies, such as suppression, rumination, and avoidance. Empirical evidence suggests that maladaptive coping approaches can have detrimental effects on psychological well-being (Joormann & Stanton, 2016; Liu & Thompson, 2017; Moritz et al., 2016). Conversely, the absence of adaptive coping strategies appears to be less consequential for the onset of psychological disorders, as indicated by research from Aldao and Nolen-Hoeksema (2012) and Moritz et al. (2016).

A substantive body of research has illuminated the correlation between personality traits and coping methods (Connor-Smith & Flachsbart, 2007; Sica et al., 2021). Specifically, extraversion has been positively associated with both problem-focused and emotion-focused coping strategies. In contrast, neuroticism has shown a negative relationship with problem-focused and positively-oriented strategies, notably acceptance, while exhibiting a positive correlation with emotion-focused and avoidance-oriented tactics. The traits of

158 agreeableness and openness have demonstrated only a modest connection with coping

159 strategies, primarily relating to social support and problem-focused coping.

160 Conscientiousness, however, has been strongly linked to problem-focused strategies.

161 Furthermore, the utilization of substances like drugs and alcohol, categorized as

162 avoidance-oriented coping strategies, has been negatively correlated with both agreeableness

163 and conscientiousness (Afshar-Oromieh et al., 2015; Connor-Smith & Flachsbart, 2007).

164   In the context of emergency responders, suboptimal coping mechanisms have been

165 shown to adversely affect resilience. For instance, a study focusing on a cohort of police

166 officers by Marmar et al. (2006) revealed that maladaptive coping strategies, including

167 alcohol misuse and rigid behavior patterns, were associated with increased chronicity and

168 severity of PTSD symptoms.

169 ***Perceived resources***

170   Availability of both internal and external resources equips individuals to effectively

171 navigate situational challenges and fortifies their resilience against stressors. Concerning

172 emergency workers, the perception of social support emerges as a pivotal external resource

173 that plays a crucial role in mitigating burnout. Findings by Setti et al. (2016) indicate that

174 emergency responders who perceive a supportive work environment, specifically from their

175 colleagues and supervisors, tend to experience reduced levels of the three cardinal

176 components of burnout: emotional exhaustion, depersonalization, and inefficacy. This body

177 of evidence aligns well with earlier studies that establish a connection between social support

178 and decreased instances of both burnout and post-traumatic symptoms (Armstrong-Stassen,

179 2004).

180   The role of social support is further corroborated by various theoretical frameworks.

181 These include the Stress-Buffering Hypothesis, which posits that social support can

182 attenuate the impact of stress (Cohen & Wills, 1985); the Social Support Deterioration

183 Model, suggesting that a decline in social support can exacerbate stress-related outcomes

184 (Norris & Kaniasty, 1996); and the Conservation of Resources Model, which argues that

185 retaining valued resources, like social support, can protect against stress-related depletion

186 (Hobfoll, 1989).

187   A meta-analysis by Berger et al. (2012) indicates that emergency responders have a

188 substantially higher likelihood of developing PTSD than the general populace. However, a

189 robust sense of social support or social acknowledgment appears to act as a protective buffer,

190 rendering these responders less prone to adverse psychological outcomes such as burnout

191 (Marmar et al., 2006; Thormar et al., 2016) and PTSD (Eriksson et al., 2013; Pietrzak et al.,

192 2014).

Life events

194   Due to the inherently stressful nature of their jobs, rescue workers are often exposed

195 to adverse life events, sometimes indirectly, posing risks to their psychological well-being.

196 Yet the relationship between these life events and mental health is not straightforward. As

197 highlighted in the research reviewed by Seery (2011), a U-shaped correlation exists between

198 exposure to lifetime adversity and overall well-being. Specifically, encountering moderate

199 levels of adversity can actually foster better mental health outcomes when compared to

200 either extreme adversity or no adversity at all. This complex interplay suggests that the

201 resilience of rescue workers may be influenced not just by the severity of the stressors they

202 face, but also by their cumulative life experiences with adversity.

Rationale and outline of the study

204   To achieve the two aims of the current study, we employed Latent Profile Analysis

205 (LPA) to discern distinct clusters of rescue workers, categorized by their specific protective

206 and risk factors and resulting outcomes. Subsequently, we probed whether individuals

207 categorized under a 'maladaptive' profile exhibit elevated levels of negative dimensions of

self-compassion compared to those classified as having an 'adaptive' profile.

Methods

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

Participants

Material

Instruments

In addition to administering specific questions targeted towards the RW group, we also administered the following scales to both participant groups.

Self-Compassion. The Self-Compassion Scale [SCS; Neff (2003)] was used to measure self-compassion. The SCS is a 26-item self-report measure designed to assess the ability to extend kindness and understanding to oneself during challenging times. The SCS is composed of six subscales, with three of them (Self-Kindness, SK; Common-Humanity, CH; and Mindfulness, MI) measuring compassionate self-responding, and the remaining three (Self-Judgment, SJ; Isolation, IS; and Over-Identification, OI) assessing uncompassionate self-responding. The SCS total score (SCS-TS) is obtained by inverting the scores of the subscales related to uncompassionate self-responding. The Italian version of the SCS by Veneziani et al. (2017) was used in the present study. The SCS demonstrated good internal consistency, with a total reliability of $\omega = .92$. The subscales also demonstrated adequate reliability: SK ($\omega = .90$), CH ($\omega = .78$), MI ($\omega = .78$), SJ ($\omega = .85$), IS ($\omega = .89$), and OI ($\omega = .86$).

Personality traits. The NEO-Five Factor Inventory (NEO-FFI-60; Costa and McCrae (1992)) was employed to examine personality traits. The NEO-FFI-60 is a widely used 60-item self-report questionnaire that assesses five broad domains of personality:

232 Neuroticism (N), Extraversion (E), Openness to experience (O), Agreeableness (A), and

233 Conscientiousness (C). The internal consistency of the five sub-scales of the NEO-FFI-60 has

234 been found to be adequate (Murray et al., 2003). In the current study, we used the Italian

235 version of the NEO-FFI-60 developed by Caprara et al. (2001). The Neuroticism ($\omega = .92$),

236 Extraversion ($\omega = .83$), Conscientiousness ($\omega = .87$), and Openness ($\omega = .78$) subscales

237 showed adequate internal consistency, whereas reliability was low for Agreableness ($\omega = .66$)

238 (e.g., Burton et al., 2021).

239   *Adaptive and maladaptive coping strategies.* The Coping Orientation to Problems

240 Experienced (COPE) test was used to assess adaptive and maladaptive coping. The COPE

241 test (Carver et al., 1989) is a self-report questionnaire commonly used to assess an

242 individual's coping skills and strategies when dealing with stressful and challenging events.

243 In the present study, we utilized the scoring system proposed by Lyne and Roger (2000),

244 which divides the COPE items into three subscales: Active Coping, Emotion-Focused

245 Coping, and Avoidance Coping. Active Coping reflects a constructive and active approach to

246 coping, in which individuals acknowledge the occurrence of a stressful situation and take

247 action to address the problem through problem-solving, gathering information, and

248 analyzing the situation logically. The other two subscales, Emotion-Focused Coping

249 (expressing feelings and seeking emotional support) and Avoidance Coping (behavioural

250 disengagement, giving up, denial, and mental disengagement), represent more passive

251 approaches to problem-solving, suggesting a belief that the situation cannot be changed.

252 These two subscales assess maladaptive coping strategies. In our study, we utilized the

253 Italian version of the COPE questionnaire developed by Sica et al. (1997; see also Sica et al.,

254 2008, 2021). The reliability of the total scale was satisfactory ($\omega = .87$); reliability

255 coefficients for each subscale were acceptable: Active coping: $\omega = .89$; Emotion-focused

256 coping: $\omega = .77$; Avoidance coping: $\omega = 0.82$.

257   *Perceived social support.* The Multidimensional Scale of Perceived Social Support

258 [MSPSS; Zimet et al. (1988)] was used to evaluate the perceived availability of social

259 support. The MSPSS encompasses three social support subscales, namely family, friends,

260 and significant others, with the items encompassing expressions such as "I can talk about my

261 problems with my family," "I can count on my friends when things go wrong," and "There is

262 a special person who is around when I am in need." Participants were requested to rate their

263 responses to the 12 items on a seven-point Likert scale, with higher total scores indicating

264 greater perceived social support, ranging from "very strongly disagree" to "very strongly

265 agree." Previous research has established the MSPSS's good test-retest reliability and

266 discriminant and construct validity (Zimet et al., 1988). For this investigation, we utilized

267 the Italian version of the scale (Prezza & Principato, 2002). The internal consistency of the

268 current sample was found to be good, with coefficients of ω of 0.94 for the family subscale,

269 0.96 for the friends subscale, and 0.95 for the significant others subscale.

270   *Post-traumatic stress.* The Impact of Event Scale - Revised [IES-R; Weiss (2007)] was

271 used to evaluate subjective distress associated with traumatic events. The IES-R is a

272 self-report instrument comprising 22 items, designed to capture the essential features of

273 traumatic stress reactions, including intrusion, avoidance, and persistent hyperarousal.

274 These features correspond to criteria B, C, and D of the DSM-IV diagnosis of posttraumatic

275 stress disorder (PTSD). The IES-R includes sub-scales for each of these domains, and it is

276 commonly used to assess PTSD symptomatology in rescue workers. Previous research has

277 demonstrated that the IES-R has good internal consistency and test-retest stability.

278 Additionally, a study by Craparo et al. (2013) examined the psychometric properties of the

279 Italian translation of the IES-R and found good concurrent and discriminant validity, as well

280 as good test-retest reliability. In the present sample, IES-R demonstrated high levels of

281 internal consistency, with a total reliability $\omega = .94$. The reliability for each of the sub-scales

282 was also high, with $\omega = .91$ for intrusion, $\omega = .82$ for avoidance, and $\omega = .87$ for

283 hyperarousal.

284   *Post-traumatic growth.* The Post-Traumatic Growth Inventory [PTGI; Tedeschi and

285   Calhoun (1996)] was employed to examine the potential positive changes following one or

286   more traumatic or stressful events. The PTGI is a self-report inventory composed of 21

287   items and encompasses five subscales, namely Relating to others, New possibilities, Personal

288   strength, Appreciation of life, and Spiritual change. Previous research has demonstrated that

289   the PTGI has good internal consistency, construct-convergent validity, and discriminant

290   validity (Tedeschi & Calhoun, 1996). Moreover, the Italian version of the PTGI has been

291   found to have good internal consistency and validity (Prati & Pietrantoni, 2014). In the

292   present study, the PTGI demonstrated high levels of internal consistency, with a total

293   reliability of $\omega = .95$. The reliability for each of the sub-scales was also adequate, with $\omega =$

294   .91 for Relating to others, $\omega = .84$ for New possibilities, $\omega = .84$ for Personal strength, $\omega =$

295   .79 for Appreciation of life, and $\omega = .75$ for Spiritual changes.

Procedure

296

Quality check

297

298   To ascertain participant engagement in the study (Ward & Meade, 2023), we

299   employed a combination of three methods: the Longstring Index for detecting consecutive

300   identical answers indicative of automated or disengaged responses; Within-Person Variance

301   for assessing the uniformity in a participant's answers to similar queries, where low variance

302   could imply inattentiveness; and six Bogus Items, which are logically impossible statements

303   designed to flag careless agreement. Utilizing these metrics, we identified 7% of participants

304   as inattentive and subsequently excluded them from the final analyses.

Data analysis

305

306   Latent Profile Analysis (LPA) is a person-centered finite mixture modeling technique

307   that partitions individuals into subgroups based on their responses to observed variables.

308   The primary objectives of LVA are twofold. Firstly, to ensure homogeneity within each

309 identified profile so that individuals grouped together are as similar as possible. Secondly, to

310 maximize heterogeneity between profiles so that each profile accurately represents a distinct

311 grouping of individuals. The classes generated by LVA are considered latent since they are

312 not directly observable but are inferred based on similarities in the data. LPA accounts for

313 measurement errors related to the uncertainty in profile membership and provides fit

314 statistics to determine the number of profiles that best represent the data.

315 The purpose of the LPA was to detect distinct subgroups of RWs who have different

316 profiles on personality dimensions, protective and risk factors, and outcome variables.

317 Standardized scores for five personality measures (neuroticism, extraversion, openness,

318 agreeableness, conscientiousness), three dimensions of coping (COPE-active coping,

319 COPE-avoidance coping, COPE-social emotional coping), perceived social support (MSPSS),

320 and post-traumatic stress (measured using the IES-R) were used as observed indicators for

321 the LPA. We used MPLUS 8.6 and the R software for all statistical analyses.

Results

323 We applied LPA to fit an array of models, each encompassing 1 to 10 latent profiles.

324 To enhance the robustness of our parameter estimates, we employed 1,000 unique sets of

325 initial values for each model configuration. As recommended by Akogul and Erisoglu (2017),

326 we utilized an Analytic Hierarchy Process for model selection. This decision-making

327 framework incorporated a comprehensive array of fit indices, including the Akaike

328 Information Criterion (AIC), Approximate Weight of Evidence (AWE), Bayesian

329 Information Criterion (BIC), Consistent Akaike Information Criterion (CLC), and Kullback

330 Information Criterion (KIC). The results converged on Model 6 as the optimal solution. This

331 model permits variability in both the variances and covariances among the latent variables

332 and delineates a two-class structure.

333 To examine the precision of our class assignments, we evaluated the entropy of the

334 classification, where values approaching 1 denote enhanced distinction between classes. A

335 value greater than 0.70 is considered indicative of robust class separation. Additionally, we

336 employed the Bootstrap Likelihood Ratio Test (BLRT) to assess the comparative fit between

337 models with differing numbers of profiles. A statistically significant BLRT result lends

338 support to the more complex model, having k profiles, over its simpler counterpart with k - 1

339 profiles.

340   We also considered the class membership probabilities denoted by `Prob_min` and

341 `Prob_max`. In our chosen model, these metrics stood at 0.89 and 0.94, respectively, signaling

342 a high degree of confidence in the accuracy of class assignments. Further, we examined

343 `n_min` and `n_max`, which represent the minimum and maximum proportions of cases

344 allocated to each class. These values were relatively balanced at 0.44 and 0.56, offering no

345 cause for concern about class imbalance unless guided by specific theoretical rationale.

346   Table 1 presents the fit indices for the evaluated model configurations.

Table 1

Model fit for one through 10 profile solutions tested for the RW sample.

Model	Classes	AIC	BIC	Entropy	p_min	p_max	n_min	n_max	BLRT_p
1	1	21342.45	21434.88	1.00	1.00	1.00	1.00	1.00	
1	2	20740.67	20883.93	0.71	0.88	0.94	0.36	0.64	0.01
1	3	20460.08	20654.18	0.75	0.81	0.93	0.19	0.56	0.01
1	4	20335.36	20580.29	0.73	0.84	0.86	0.11	0.36	0.01
1	5	20199.94	20495.71	0.73	0.79	0.87	0.08	0.32	0.01
1	6	20148.07	20494.68	0.73	0.73	0.88	0.07	0.36	0.01
1	7	20080.74	20478.18	0.76	0.72	0.88	0.05	0.37	0.01
1	8	20014.89	20463.17	0.77	0.71	0.90	0.03	0.36	0.01
1	9	19965.51	20464.63	0.76	0.76	0.88	0.04	0.27	0.01

Model	Classes	AIC	BIC	Entropy	p_min	p_max	n_min	n_max	BLRT_p
1	10	19948.33	20498.28	0.75	0.69	0.92	0.02	0.22	0.01
6	1	19883.12	20183.51	1.00	1.00	1.00	1.00	1.00	
6	2	19509.40	20114.80	0.70	0.89	0.94	0.44	0.56	0.01
6	3	19416.00	20326.42	0.73	0.88	0.89	0.23	0.39	0.01
6	4	19366.48	20581.91	0.80	0.88	0.90	0.09	0.40	0.01
6	5	19360.48	20880.92	0.79	0.83	0.92	0.11	0.37	0.09
6	6	19313.54	21138.99	0.82	0.84	0.98	0.07	0.29	0.01
6	7	19374.46	21504.93	0.82	0.83	0.98	0.07	0.28	0.96
6	8	19285.55	21721.03	0.85	0.83	0.99	0.07	0.22	0.01
6	9	19275.58	22016.07	0.87	0.88	0.97	0.07	0.18	0.15
6	10	19342.60	22388.10	0.88	0.87	0.98	0.06	0.14	1.00

347   The solution identifying two profiles differentiates between a high-resilience group

348 ($n = 408$) and a low-resilience group ($n = 343$), as elaborated in Table 2. These profiles were

349 labeled as "high resilience" and "low resilience" to encapsulate their distinct characteristics

350 with respect to stress, burnout, and PTSD. In particular, the "high resilience" profile is

351 characterized by elevated levels of metrics commonly viewed as protective factors against

352 stress-related outcomes, in addition to lower values for variables identified as risk factors.

353   When contrasting Profile 1 (high resilience) with Profile 2 (low resilience), the

354 following reliable differences were observed across several psychological and behavioral

355 measures: Neuroticism exhibited reliably lower levels in Profile 1 with a coefficient (β) of

356 -7.11 and a 95% Credible Interval (CI) ranging from -8.34 to -5.90; Extraversion showed

357 reliably higher levels in Profile 1, with a β value of 4.04 and a 95% CI of [3.15, 4.94];

358 Agreeableness was reliably higher in Profile 1, marked by a β of 3.04 and a 95% CI of [2.25,

359 3.84]; Conscientiousness also registered reliably higher levels in Profile 1, evidenced by a β

360 value of 2.69 and a 95% CI of [1.75, 3.61]; Avoidance Coping displayed reliably lower levels in

361 Profile 1, characterized by a β of -2.46 and a 95% CI of [-3.34, -1.63]; Perceived social

362 support was reliably higher in Profile 1, as indicated by a β of 3.12 and a 95% CI of [1.60,

363 5.24]; IES-R (Impact of Event Scale – Revised) levels were reliably lower in Profile 1,

364 demonstrated by a β of -4.15 and a 95% CI of [-6.27, -2.54].

Table 2

Latent profile average means and standard error.

Parameter	Estimate (Class 1)	SE (Class 1)	Estimate (Class 2)	SE (Class 2)
neuroticism	-0.369	0.063	0.414	0.080
extraversion	0.301	0.060	-0.338	0.070
openness	0.017	0.063	-0.019	0.073
agreeableness	0.216	0.066	-0.243	0.079
conscientiousness	0.181	0.058	-0.203	0.069
active_coping	-0.011	0.064	0.013	0.071
avoidance_coping	-0.299	0.048	0.336	0.081
soc_emo_coping	-0.069	0.064	0.077	0.075
iesr	-0.503	0.040	0.564	0.081
mpss	0.403	0.077	-0.452	0.082

365   In line with our predictions, the high-resilience group exhibited an elevated total

366 score on the Self-Compassion Scale ($\beta = 12.71$; 95% CI = [10.50, 14.95], Cohen's $d = 0.87$,

367 95% CI = [0.72, 1.03]). As shown in Figure 1, individuals within the low-resilience profile

368 consistently registered higher scores across all three negative facets of

369 Self-Compassion—namely, Self-Judgment, Isolation, and Over-Identification. In each

370 instance, the magnitude of these differences was large, as indicated by Cohen's d. Conversely,

371 the low-resilience group displayed comparatively reduced levels of Self-Kindness and

³⁷² Mindfulness relative to the high-resilience group; however, these differences were of a smaller

³⁷³ magnitude based on Cohen's *d*.

SCS Subscales as a Function of LPA Profile

Figure 1

My caption.

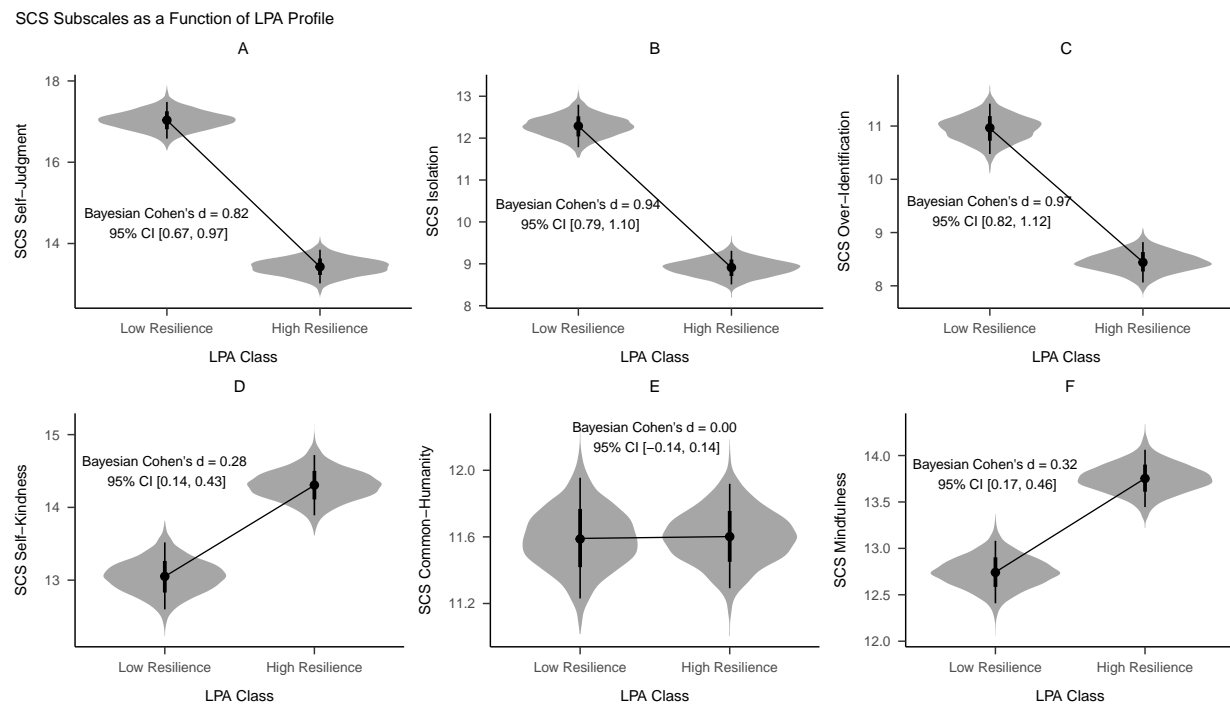³⁷⁴   **Discussion**

³⁷⁵   The construct of self-compassion is commonly assessed using the Self-Compassion

³⁷⁶ Scale (SCS) self-report questionnaire. The SCS measures six dimensions of self-compassion,

³⁷⁷ three of which evaluate the active components of self-compassion. These dimensions include

³⁷⁸ Self-kindness (SK), Common humanity (CH), and Mindfulness (MI), which involve being

³⁷⁹ kind and understanding towards oneself, recognizing that personal failures and pain are

³⁸⁰ common experiences, and maintaining awareness of one's painful thoughts and feelings. The

³⁸¹ remaining three dimensions evaluate the "hindrances" to self-compassion, including

³⁸² Self-judgment (SJ), Isolation (IS), and Overidentification (OI). These dimensions assess

³⁸³ factors that hinder self-compassion, such as being self-critical and unsympathetic towards

³⁸⁴ one's shortcomings, isolating oneself from others, and over-identifying with one's painful

thoughts and emotions (Neff, 2022).

Compassion fatigue often leads to a sense of helplessness and a feeling of being unable to do more to help others (Boyle, 2015). This "learned helplessness" may lead individuals who experience compassion fatigue to rely more on non-self-compassionate coping strategies compared to those who are less affected by compassion fatigue (Gonzalez-Mendez & Díaz, 2021).

decrease the use of self-compassionate responding (i.e., self-kindness, common humanity, mindfulness) and increase uncompassionate responding (i.e., self-judgment, isolation, overidentification) – see also Gonzalez-Mendez and Díaz (2021).

We propose that individuals who experience compassion fatigue may not experience changes in compassionate responding, as their motivation to help others remains intact. However, they may experience a strong increase in uncompassionate responding (e.g., self-blaming), especially in those who are less directly involved in alleviating the suffering of others.

enabling an individual to mobilise internal resources and build up resistance against stressors

individuals with a strong SOC might experience reduced job stress.

Sense of coherence (SOC) originates from Antonovsky's (1979, 1987, 1991, 1993) theory of salutogenesis, a paradigm that focuses on factors that promote health and well-being and considers the salutary potential of stressors. SOC is a dispositional orientation that reflects an individual's capacity to cope with life stressors and comprises three components: Comprehensibility, the sense that 19 stimuli are predictable and structured (cognitive component); Manageability, the sense that available resources (both

⁴⁰⁹ internal and external) are sufficient to cope with demands from the stimuli

⁴¹⁰ (instrumental/behavioural component); and Meaningfulness, the sense that the demands

⁴¹¹ have significance and are worthy of investment in terms of personal ideals and standards

⁴¹² (motivational component). An individual's SOC is reinforced by their "general resistance

⁴¹³ resources" (e.g., intelligence, social support, coping strategies, and preventative health

⁴¹⁴ orientation), which are shaped by life experiences.

⁴¹⁵ These results indicate the need for improving pre-employment strategies to select the

⁴¹⁶ most resilient individuals for rescue work, to implement continuous preventive measures for

⁴¹⁷ personnel.

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