

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

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Abstract

Objective

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

Methods

A within-participants cross-sectional survey was completed with UK ambulance staff. Data were collected via an anonymous online survey on participants' demographics, emotional intelligence, self-compassion (separated into the subscales of self-coldness and self-kindness), compassion fatigue and compassion satisfaction, and psychological wellbeing. The relationships between variables were first explored using Pearson's r correlational analyses. Then three hierarchical multiple regressions were used to explore what predicted the outcome variables of compassion fatigue, compassion satisfaction and psychological wellbeing.

Results

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

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

Conclusions

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

Keywords

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

Declaration of interest

The authors report there are no competing interests to declare.

Introduction

Emergency ambulance work has been described as “inherently intense” (Granter et al., 2019), with regular exposure to traumatic events such as others’ distress, death and treating acute illness (Davis et al., 2019; Lawn et al., 2020), and occupational stressors including workplace violence (Setlack, 2019), perceived high expectations from the public (Nelson et al., 2020; Wankhade, 2016), and perceived lack of respect from other services (Beldon et al., 2022; Nelson et al., 2020). Wider healthcare context is also important, for example in the UK, pressures are heightened by increased demands on services, lack of funding, and staff shortages (NHS Providers, 2019) which can lead to longer hours, concern about the impact of demands on patients, high workload, and few breaks (Beldon et al., 2022; Clompus & Albarran, 2016; Wankhade, 2016).

These factors have a cumulative negative impact on wellbeing. Ambulance staff report higher rates of depression, anxiety, post-traumatic stress disorder (PTSD), and distress (Bennett et al., 2005; Davis et al., 2019) than the general population (Petrie et al., 2018; Wagner et al., 2020) and other emergency service personnel (Berger et al., 2012), while male UK paramedics (the senior ambulance staff) are 75% more likely to complete suicide than other health care workers (Office for National Statistics, 2017). They also experience high rates of burnout - a response to chronic occupational stress characterised by emotional exhaustion, feelings of disconnection or cynicism regarding work, and lack of occupational efficacy (Maslach et al., 2001); and compassion fatigue (CF; Beldon et al., 2022; Dehghannezhad et al., 2020; Koohsari et al., 2022; Zaidi et al., 2017) – the negative emotional effects of caring for distressed individuals, such as low mood, trauma responses and feeling overwhelmed (Figley, 1995; Sorenson et al., 2016). This reflects the increased risk of negative wellbeing outcomes for ambulance staff.

Ambulance staff wellbeing has implications for ambulance service organisations. Poorer ambulance staff wellbeing is associated with lower job satisfaction and greater turnover intention (Wankhade, 2016), and can lead to increased sickness absence, with ambulance staff consistently having the highest sickness absence rates of any professional group in the UK National Health Service (NHS; NHS Digital, 2022a). This is costly to services and can increase pressure on other staff members.

Despite exposure to highly stressful experiences and increased risk of negative wellbeing outcomes, research into ambulance staff wellbeing is lacking (Clark et al., 2021; Wagner et al., 2020). Research exploring potential psychological mechanisms involved in ambulance staff wellbeing could thus facilitate strategies to protect and improve their wellbeing.

Emotional intelligence (EI) is one factor associated with wellbeing in other populations. EI is a broad intelligence incorporating the ability to perceive, understand and reason about emotions, manage ones' own and others' emotions, and use emotions to facilitate thought (Mayer & Salovey, 1997). Greater EI is related to better wellbeing in health care workers, predicting lower depression, stress, and anxiety (Landa et al., 2008; Ng et al., 2014), greater life satisfaction, psychological wellbeing, self-esteem, and self-efficacy (Montes-Berges & Augusto-Landa, 2014; Pérez-Fuentes et al., 2019) and associated with lower burnout (Görgens-Ekermans & Brand, 2012; Markiewicz, 2019; Ünal, 2014; Weng et al., 2011; Zeidner et al., 2013) and greater compassion satisfaction (CS) - the positive feelings experienced due to helping others (Zeidner & Hadar, 2014).

The few studies on EI which include ambulance staff suggest a positive relationship between EI and wellbeing. Greater EI was related to lower emotional exhaustion and greater job satisfaction in 207 EMTs (Nauman et al., 2019), fewer PTSD symptoms in 55 EMTs and firefighters (Rinker, 2016), and better sleep quality and lower fatigue in 400 health care

students including paramedicine students (Abdali et al., 2019). Further, 100 paramedicine students reported improved stress management skills following an EI intervention (Sellakumar, 2017), suggesting that EI could improve wellbeing. However, as studies have often been on paramedic students or mixed professional groups, further research is needed to clarify this relationship in ambulance staff.

Self-compassion is another factor that is positively associated with wellbeing. Neff (2003a) defined self-compassion as a way of relating to oneself when experiencing suffering, from uncompassionate “self-coldness” to compassionate “self-kindness” (Neff, 2022). This includes three aspects: self-kindness - approaching oneself with understanding and comfort, versus self-judgement; common humanity - viewing one’s suffering as part of the human condition, versus feeling isolated; and mindfulness - accepting experiences, versus over-identifying with them. Greater self-compassion was associated with lower burnout and CF and greater CS in health care workers (Buceta et al., 2019; Duarte & Pinto-Gouveia, 2017; Duarte et al., 2016; Hashem & Zeinoun, 2020), and predicted lower burnout and stress in 1700 doctors, nurses, and medical residents (Dev et al., 2020). Intervention studies have found that increases in self-compassion predicted decreases in burnout, mental health symptoms, and stress (Delaney, 2018; Duarte & Pinto-Gouveia, 2017; Neff et al., 2020) and increases in life satisfaction (Duarte & Pinto-Gouveia, 2017) among health care workers. Thus, self-compassion may protect health care workers’ wellbeing.

There has been little research on self-compassion and wellbeing in ambulance staff. Two studies found greater self-compassion was related to greater psychological wellbeing and lower PTSD, mental health symptoms, and burnout in ambulance staff (Davis, 2017; Setlack, 2019). Research on related concepts found that self-acceptance (the tendency not to be self-critical) predicted increased resilience (Bilsker et al., 2019), and fewer stress-related symptoms, while greater self-criticism was related to greater stress, mental and physical

health symptoms, and lower job satisfaction (Rojas et al., 2022). This indicates that a compassionate, rather than self-critical, approach to oneself may be related to better wellbeing in ambulance staff. However, Mitmansgruber et al. (2008) unexpectedly found that greater contempt and “tough control” regarding one’s emotions predicted better psychological wellbeing in paramedics, suggesting that self-compassion was not related to better wellbeing. While Mitmansgruber et al. (2008) measured meta-emotions (emotional reactions to one’s emotions, such as anger about feeling anxious), rather than self-compassion, this suggests that self-compassion may have a different relationship with wellbeing in ambulance staff than other health care workers.

While current research suggests that EI and self-compassion may relate to better wellbeing in ambulance staff, the lack of research solely on ambulance staff and mixed evidence regarding self-compassion limits the conclusions that can be drawn. This study therefore aims to explore the relationships between EI, the self-coldness and self-kindness aspects of self-compassion, and wellbeing outcomes in ambulance staff. Wellbeing outcomes will include professional quality of life (CF and CS). As wellbeing includes positive aspects, rather than just being the absence of difficulties (Seligman, 2018), psychological wellbeing will also be explored as a positive outcome.

It is hypothesised that:

H1: Greater EI will be associated with greater perceived psychological wellbeing and CS, and lower CF.

H2: Greater self-kindness will be associated with greater perceived psychological wellbeing and CS, and lower CF.

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

H4: When combined in one model, EI, self-kindness, and self-coldness will contribute unique variance to the prediction of psychological wellbeing, CS, and CF.

Methods

Participants

Inclusion criteria were that participants:

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

A sample size of at least 92 to 98 was sought, based on a regression model including five to six predictor variables, with a medium effect size, power of 0.8, and alpha level of $p = .05$. A medium effect size (0.15) was chosen as previous research on the relationships between wellbeing and both EI (de Looft et al., 2019; Gong et al., 2020) and self-compassion (Buceta et al., 2019; Dev et al., 2020) in health care workers has found medium effect sizes. The final sample size of 146 met this criterion.

Study Design

This quantitative study used a within-participants, cross-sectional design to explore relationships between EI, self-compassion, and wellbeing in ambulance staff. Data were collected via a one-off anonymous online survey and analysed using Pearson's r correlational analyses and hierarchical multiple regressions. Research paramedics and ambulance staff were consulted on the study design, participant documents, and piloted the questionnaires to check their acceptability, ease, and time for completion.

Materials

Participants provided demographic information including gender, ethnicity, age, job role, and years of experience working on emergency ambulances.

Self-Report Emotional Intelligence Test (SREIT)

EI ability was measured using the SREIT (Schutte et al., 1998). This 33-item measure scores responses from 1 (Strongly disagree) to 5 (Strongly agree). Higher scores indicate higher EI. The SREIT has good internal reliability in health care workers ($\alpha = .84$ to $.92$; Ng et al., 2014; Zeidner & Hadar, 2014). Scores of 33-110 can be categorised as “unusually low” EI, 111-137 as “average” and 138-165 as “unusually high” (Schutte et al., 1998). A proposed four-factor structure was not supported in prior research (Brackett & Mayer, 2003; Craparo et al., 2014; Musonda et al., 2020), therefore total EI score was used.

Self-Compassion Scale (SCS)

Self-compassion was measured using the SCS (Neff, 2003b). This 26-item questionnaire scores responses from 1 (Almost never) to 5 (Almost always). A two-factor structure was used, as recommended by previous research (Brenner et al., 2017; Brenner et al., 2018; Costa et al., 2016; López et al., 2015); “self-kindness” incorporates the compassionate subscales of self-kindness, mindfulness, and common humanity; “self-coldness”, combines the uncompassionate subscales of self-judgement, over-identification, and isolation. Higher scores indicate higher self-coldness or self-kindness. Average scores of 1-2.49 indicate low levels, 2.5-3.49 moderate levels, and 3.5-5.0 high levels (Neff, 2003a).

The SCS has good reliability and validity with health care workers (Buceta et al., 2019). Good internal reliability was found for self-kindness ($\alpha = .86$ to $.91$) and self-coldness ($\alpha = .89$ to $.94$) factors (Brenner et al., 2017; Costa et al., 2016; López et al., 2015).

Professional Quality of Life Scale (ProQOL)

The ProQOL-21 measures CF and CS (Heritage et al., 2018). This is an alternative method of scoring the 30-item ProQOL-5 to address construct validity issues (Stamm, 2010) to give two scores: CS, measured with ten items, and CF, using eleven items. Responses are scored from 1 (Never) to 5 (Very often). Higher scores indicate higher CS and CF. The ProQOL-5 has been used extensively with people in helping professions and the ProQOL-21

scales have good internal reliability ($\alpha = .90$ for CF, $\alpha = .92$ for CS; Heritage et al., 2018). Recommended cut-off scores are 21 and 30 for low and high CS, and 16 and 25 for low and high CF (Stamm, 2010).

Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)

The WEMWBS (Tennant et al., 2007) is a 14-item scale of subjective psychological wellbeing. Responses are scored from 1 (None of the time) to 5 (All of the time), to provide an overall score. Higher scores indicate greater psychological wellbeing. The WEMWBS has good internal reliability with health care workers ($\alpha = .93$; Oates et al., 2017).

Procedure

Two NHS ambulance services and the College of Paramedics advertised the study through internal staff communications. Participants were also able to share the survey link with colleagues and on social media. Recruitment occurred between 22nd April and 30th September 2022. Participants accessed the online survey on the Qualtrics website via the link. The survey began with the participant information sheet which provided details about the study and the use of their data. This included a consent statement to confirm participants fully understood the information, consented for their data to be used in the research, and met the inclusion criteria. They were then presented with the survey questionnaires and finally a debrief sheet. The survey was estimated to take 20-30 minutes to complete.

Ethical Approval

The Lancaster University Faculty of Health and Medicine Research Ethics Committee granted ethical approval (FHMREC21002). Research governance approval was obtained through the UK Health Research Authority (HRA) Integrated Research Application System (Project ID: 303396). Research and development approval was obtained from participating NHS Trusts.

Data Analysis

Data analysis was completed using SPSS version 27. Chi-squared goodness-of-fit tests and an independent samples t-test analysed differences in the demographics and SREIT of those who completed the full survey and those who did not. Descriptive statistics for demographics and study variables were explored. Cronbach's alphas for study variables were calculated to assess internal consistency.

For correlation analyses, data were checked for outliers and normality of distribution by visually inspecting histograms and Q-Q plots and examining skew and kurtosis. These were within acceptable parameters, thus Pearson's *r* correlational analyses were used. Sensitivity analyses were conducted excluding one participant with an outlying SREIT score, but this did not significantly affect the results, so they were included in analyses.

Three hierarchical multiple regressions were used to explore relationships between predictor variables and three outcome variables: CF, CS, and psychological wellbeing. Data were checked and met assumptions including independence of residuals, no evidence of multicollinearity, homoscedasticity, and normally distributed residuals. Following previous research, demographic variables that significantly correlated with at least one outcome variable were entered in the first block. As prior research suggests a stronger role for EI than self-compassion in ambulance staff wellbeing, EI was entered in the next block, with self-compassion variables entered last. Self-kindness and self-coldness were entered separately to explore the predictive value of each.

Results

169 participants consented to participate and began the survey. 146 surveys were completed in full, while 11 participants completed demographics questions only and a further 12 completed demographics questions and SREIT. There were no statistically significant differences between those who completed the survey and those who did not on demographic

variables ($p > .05$) or EI scores ($t(156) = -1.140, p = .256$). Therefore, only the data of the 146 participants who completed the survey were included in further analyses.

Sample Characteristics

The sample demographic characteristics are presented in Table 1.

Table 1

Participant Demographic Characteristics

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

Paramedic (including specialist paramedics)	82	56.2
Emergency Medical Technician	32	21.9
Student paramedic	3	2.1
Ambulance support staff	25	17.1
Call handler	4	2.7
Years of experience as ambulance staff		
0-1	11	7.5
2-5	60	41.1
6-10	35	24.0
11-15	17	11.6
16-20	7	4.8
21-25	7	4.8
26-30	5	3.4
30+	4	2.7

Descriptive Statistics

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

Table 2

Descriptive Statistics, Cronbach's Alphas and Correlation Coefficients for Study Variables

M(SD)	α	1.	2.	3.	4.	5.	6.	7.	8.
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1. Age	-	-	.595*	.11	.291*	-	.132	-.090	.202*
			*	7	*	.418*			
						*			
2. Years of experience	-	-	.00	.045	-.155	-.091	.169*	-.039	
			4						
3. EI	11.62	.8	-	.618*	-	.540*	-	.526*	
	3	9		*	.459*	*	.224*	*	
	(13.86				*		*		
)								
4. Self- kindness	33.64	.9	-	-	.414*	-	.607*		
	(11.06	3			.698*	*	.251*	*	
)				*		*		
5. Self- coldness	42.65	.9	-	-	.368*	-	.654*		
	(12.10	3			.378*	*	.654*	*	
)				*		*		
6. CS	36.75	.9	-	-	.628*	-	.628*		
	(7.53)	3					.510*	*	
							*		
7. CF	29.18	.91	-	-	.594*	-	.594*		
	(9.42)							*	
8. Psycholog ical wellbeing	43.05	.94	-	-		-			
	(10.00)								

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

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

The mean EI score was at the lower end of “average” EI (Schutte et al., 1998), slightly lower than studies with other health care workers (Kaur et al., 2015; Zeidner & Hadar, 2014) and first responders (Markert-Green, 2021; Romosiou et al., 2019; Wagner et al., 2016), though similar to police officers in Malaysia (Kamri et al., 2019).

The mean self-kindness score was at the low end of “moderate” self-kindness, slightly lower than studies with EMTs (Davis, 2017), firefighters (Kaurin et al., 2018), and police (Çetin et al., 2008). The mean self-coldness score indicates “high” self-coldness (Neff, 2003a), similar to scores reported by EMTs (Davis, 2017), but higher than firefighters (Kaurin et al., 2018) and other health care workers (Buceta et al., 2019; Hashem & Zeinoun, 2020).

The ProQOL scores indicate high CS and CF. CS and CF scores vary in the literature, with the current mean CS similar to ambulance staff and first responders in some studies (Dehghannezhad et al., 2020; Zaidi et al., 2017), but higher CF than ambulance staff in other studies (Crampton, 2014; Dehghannezhad et al., 2020; Ondrejková & Halamová, 2022).

The mean WEMWBS score was similar to ambulance staff and first responders in some previous research (Davis, 2017; Jackman et al., 2020; Keech et al., 2020).

Correlational Analyses

Pearson’s r correlations between variables are shown in Table 2. All psychological variables were significantly correlated in the expected directions. CF had small negative correlations with EI ($r = -.224, p < .01$) and self-kindness ($r = -.251, p < .01$), a moderate positive correlation with self-coldness ($r = .368, p < .01$), a small positive correlation with years of experience ($r = .169, p < .05$), and did not correlate significantly with age. CS had a strong positive correlation with EI ($r = .540, p < .01$), a moderate positive correlation with

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

Hierarchical Multiple Regression Analyses

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

Compassion Fatigue

The overall model was significant ($F(5, 140) = 7.011, p < .001$), explaining 17.2% of the variance in CF scores ($R^2 = .200, \text{adjusted } R^2 = .172$). In the final model, self-coldness ($\beta = .392, p = .001$) and years of experience ($\beta = .295, p = .002$) positively predicted CF. Age ($\beta = -.118, p = .254$), EI ($\beta = -.094, p = .331$) and self-kindness were not significant predictors ($\beta = .102, p = .339$). The results are summarised in Table 3.

Table 3

Results of Hierarchical Multiple Regression for Compassion Fatigue

	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>	<i>p</i>	<i>R</i> ²	<i>Adj R</i> ²	<i>R</i> ²	<i>F</i>
								<i>Change</i>	<i>Change</i>

Step						.083	.071	.083	6.502**
1									
	Age	-	.788	-	-	.004			
		2.304		.290	2.924				
	Years of experience	1.948	.568	.340	3.428	.001			
Step						.121	.102	.037	6.035*
2									
	Age	-	.782	-	-	.010			
		2.032		.255	2.597				
	Years of experience	1.837	.560	.320	3.278	.001			
	EI	-.133	.054	-	-	.015			
				.195	2.457				
Step						.200	.172	.080	6.962**
3									
	Age	-.940	.821	-	-	.254			
				.118	1.145				
	Years of experience	1.693	.544	2.95	3.111	.002			
	EI	-.064	.066	-	-.975	.331			
				.094					
	Self-kindness	.087	.102	.102	.846	.339			
	Self-coldness	.305	.087	.392	3.515	.001			

Note. EI = emotional intelligence

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

Compassion Satisfaction

The overall model was significant ($F(5, 140) = 14.248, p < .001$), explaining 31.4% of the variance in CS scores ($R^2 = .337$, adjusted $R^2 = .314$). In the final model, greater EI ($\beta = .460, p < .001$) and fewer years of experience ($\beta = -.193, p = .027$) significantly predicted higher CS. Age ($\beta = .133, p = .161$), self-kindness ($\beta = .003, p = .979$) and self-coldness ($\beta = -.140, p = .171$) did not significantly predict CS. The results are summarised in Table 4.

Table 4

Results of Hierarchical Multiple Regression for Compassion Satisfaction

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

EI	.250	.048	.460	5.215	<.001
Self-kindness	.002	.075	.003	.026	.979
Self-coldness	-.087	.063	-	-	.171
			.140	1.377	

Note. EI = emotional intelligence

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

Psychological Wellbeing

The overall model was significant ($F(5, 140) = 29.996, p < .001$), explaining 50.0% of the variance in psychological wellbeing ($R^2 = .517$, adjusted $R^2 = .500$). In the final model, greater EI ($\beta = .219, p = .004$) and lower self-coldness ($\beta = -.462, p < .001$) significantly predicted greater psychological wellbeing. Age ($\beta = .014, p = .886$), years of experience ($\beta = -.127, p = .088$) and self-kindness ($\beta = .151, p = .109$) were not significant predictors. The results are summarised in Table 5.

Table 5

Results of Hierarchical Multiple Regression for Psychological Wellbeing

	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>	<i>p</i>	<i>R</i> ²	<i>Adj R</i> ²	<i>R</i> ²	<i>F Change</i>
Step						.079	.066	.079	6.135**
1									
Age	2.907	.838	.344	3.469	.001				
Years of experience	-	.604	-	-	.016				
	1.474		.242	2.439					
Step						.320	.306	.241	50.418**
2									
Age	2.172	.730	.257	2.976	.003				

Years of experience	-	.523	-	-	.026				
EI	1.174		.193	2.246					
	.358	.050	.496	7.101	<.001				
Step						.517	.500	.197	28.544**
3									
Age	.115	.677	.014	.170	.866				
Years of experience	-.771	.449	-	-	.088				
EI			.127	1.719					
EI	.158	.054	.219	2.916	.004				
Self-kindness	.136	.084	.151	1.614	.109				
Self-coldness	-.382	.072	-	-	<.001				
			.462	5.336					

Note. EI = emotional intelligence

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

Discussion

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

coldness have differential importance to the professional and psychological wellbeing of ambulance staff.

High CF was indicated in the sample. This may be due to data collection occurring during the COVID-19 pandemic, as health care workers working during this time reported increased CF (Lluch et al., 2022). Years of experience and self-coldness positively predicted CF, with self-coldness as the best predictor. This supports previous research which found that self-coldness predicted CF in palliative care staff (Galiana et al., 2022), aspects of self-coldness predicted CF in health care workers (Yu et al., 2021), and that self-criticism predicted CF while total self-compassion did not in people in helping professions (Ondrejková & Halamová, 2022). Self-coldness may predict greater CF as it amplifies pain and distress when faced with others' suffering (Neff, 2003a), overwhelming the individual's ability to cope with distress over time (Coetzee & Klopper, 2010).

In this study, while EI negatively correlated with CF, it did not significantly predict CF in a model with self-coldness. Maillet & Read (2021) found that only the perception and utilisation of emotions aspects of EI predicted lower CF in health care workers. Additionally, Zeidner et al. (2013) found that EI and emotion management skills together only predicted 8% of the variance in health care workers' CF. Thus, EI may have a small effect on CF, but self-coldness may be more relevant when both are included in a model.

The final model only accounted for 17.2% of the variance in CF, suggesting that important predictors were not included. Workplace factors, including long hours, violence, traumatic events, high workload, and lack of support and autonomy (Dehghannezhad et al., 2020; Ericsson et al., 2021; Lluch et al., 2022; Maillet & Read, 2021; Turgoose & Maddox, 2017; Yu et al., 2021), and psychological factors including negative affect, psychological inflexibility, and PTSD symptoms (Duarte & Pinto-Gouveia, 2017; Koohsari et al., 2022; Turgoose & Maddox, 2017; Yu et al., 2021; Zeidner et al., 2013) are related to greater CF in

health care workers and ambulance staff. Therefore, it may be valuable to include a broader range of occupational and psychological variables in future research.

CS was predicted by EI, indicating that staff with greater EI tend to be more satisfied with their caring role. This supports studies which found greater EI to be related to CS in health care workers (Maillet & Read, 2021; Zeidner & Hadar, 2014) and is consistent with the theory that EI allows for more effective emotion regulation, leading to positive mental health outcomes (Mayer & Salovey, 1997). Neither self-kindness nor self-coldness predicted CS. Previous research with health care workers found self-coldness to make a very small contribution (Buceta et al., 2019) or not predict CS (Yu et al., 2021), when accounting for variables such as sense of vocation (Buceta et al., 2019), empathy, and work engagement (Yu et al., 2021). This suggests that self-coldness may not affect CS as much as empathy for others and job satisfaction. This may be because CS can be achieved from focusing on others and alleviating patient suffering (Stamm, 2010), thus may be less influenced by staff members' approach towards themselves (Yu et al., 2021).

EI predicted psychological wellbeing, consistent with previous research in health care workers (Noshili et al., 2022) and supporting theoretical understandings that EI benefits overall wellbeing (Bar-On et al., 2012; Mayer & Salovey, 1997). Self-coldness negatively predicted psychological wellbeing, aligned with literature which found self-coldness to be inversely related to positive wellbeing outcomes, including life satisfaction, positive affect, optimism, self-esteem, self-acceptance, and self-efficacy (Baer et al., 2012; Brenner et al., 2018; Neff et al., 2018). This suggests that approaching one's experiences with coldness can exacerbate the negative effects of unpleasant experiences, leading to difficulty accepting and regulating emotions, thus to poorer wellbeing (Neff, 2003a).

It was surprising that self-kindness did not predict CF, CS, or psychological wellbeing in the models with EI and self-coldness, despite significant correlations. This may reflect the

nature of ambulance work. Mitmansgruber et al. (2008) found that “tough control” and contempt for emotions predicted greater psychological wellbeing in paramedics, while compassion for emotions predicted lower wellbeing. It was suggested that “tough control” supports short-term wellbeing by allowing staff to put their feelings aside and help distressed others, whereas compassionately engaging in the moment could reduce wellbeing. However, the long-term effects of this are unclear and the study did not include CF or CS. Further, much of the research on self-compassion and wellbeing (Duarte & Pinto-Gouveia, 2017; MacBeth & Gumley, 2012; Ondrejková & Halamová, 2022; Upton, 2018; Zessin et al., 2015) only used total self-compassion scores and thus cannot determine the relative contribution of self-kindness and self-coldness (Muris & Otgaar, 2020). Research that has separated these aspects found that self-coldness has a stronger relationship with negative wellbeing outcomes than self-kindness (Brenner et al., 2018; López et al., 2015; Muris & Petrocchi, 2017; Neff et al., 2018), and that self-kindness and self-coldness are often similarly predictive of positive wellbeing outcomes (Brenner et al., 2018; López et al., 2015; Neff et al., 2018). This indicates that vulnerability to negative wellbeing outcomes arising from the tendency towards self-coldness may be more important in predicting wellbeing than a protective effect of self-kindness and may explain why self-kindness did not predict wellbeing in this study.

Clinical Implications

The findings have potential implications for ambulance services in supporting staff wellbeing. Self-coldness may be promoted by a “blame culture” reported in ambulance services (Granter et al., 2019). A more compassionate culture may support staff wellbeing by reducing self-judgement engendered by perceived lack of compassion from management (Beldon et al., 2022; NHS England, 2022), and isolation stemming from a perceived discouragement from expressing emotions or seeking support (Mind, 2019; Nelson et al., 2020), thus decreasing self-coldness. Compassionate leadership is related to better ambulance

staff wellbeing and better patient outcomes (Eaton-Williams & Williams, 2022; Kline, 2019; Petrie et al., 2018; West et al., 2017). Individual leaders and services could contribute by, for example, creating space for staff to share in decision-making, listening with curiosity to their difficulties (Kline, 2019), and taking a non-judgemental approach to staff engagement (Eaton-Williams & Williams, 2022; Lawn et al., 2020).

Further, services may promote wellbeing by facilitating increased EI. Ambulance staff report that lack of support or reflection time following potentially traumatic calls increased distress and tendency to suppress emotions (Beldon et al., 2022; Lawn et al., 2020; Nelson et al., 2020). Therefore, provision of reflective spaces post-incident, and ensuring teams have space to reflect together on the impact of the work (West et al., 2017), may allow staff to gain insight and awareness into their emotions.

Self-kindness did not predict wellbeing, thus interventions just focusing on increasing self-kindness may not be as relevant to ambulance staff wellbeing. There is currently inconsistent access to psychological support (Billings et al., 2021), despite staff's expressed desire for such support (Beldon et al., 2022; Lawn et al., 2020). Therefore, interventions and coping strategies could be developed which focus on the particular needs of ambulance staff. Support could involve strategies to enhance EI, for example training on responding to others' distress (Nelson et al., 2020) and recognising and managing one's own distress (Lawn et al., 2020). It could also involve reducing self-coldness, for example reducing stigma around help-seeking (Lawn et al., 2020) and reducing isolation by enabling sharing of experiences (Clompus & Albarran, 2016). Further research could then explore the effects of these service changes and interventions on ambulance staff wellbeing.

Limitations and Future Research

First are limitations regarding the sample. Only actively employed staff were included, who may experience better wellbeing than those on sick leave or who have left the

profession, which may bias the results. In the sample, people under 35 years of age were over-represented compared to the UK ambulance staff population (NHS Digital, 2022b). As age had an effect on some variables, the higher proportion of younger people could mean the results do not generalise to other UK ambulance populations. Further, data collection occurred during a pandemic, which may have negatively influenced staff perceptions of their wellbeing due to increased stressors. Therefore, it may be beneficial to replicate the study to explore whether these relationships are consistent over time, and to compare findings with staff who have retired, left the profession or are on long-term sick leave. More purposive sampling may also ensure the sample is representative of the ambulance staff population.

Second, data were self-report and collected anonymously. Thus, it was not possible to calculate how many people chose not to participate or to explore reasons for non-completion. Self-report measures could introduce bias if individuals have little awareness of their EI and self-compassion or do not feel able to disclose lower wellbeing due to stigma (Nelson et al., 2020). The anonymous design was utilised to ameliorate the latter problem. Additionally, as the study was cross-sectional, causation cannot be determined. For example, rather than EI and self-compassion leading to better wellbeing, ambulance staff with greater wellbeing may be more able to recognise and manage their emotions and approach their experiences compassionately. Thus, longitudinal research exploring the relationships between EI, self-compassion, and wellbeing would help to clarify the direction of these relationships.

Finally, the number of variables was limited to reduce participant burden. However, the small variance explained by the CF regression model suggests that important factors were not included. Future research could include a broader range of factors hypothesised to be important in ambulance staff wellbeing, such as occupational stressors and traumatic experiences (Dehghannezhad et al., 2020; Renkiewicz et al., 2021).

A further avenue for research may be the relationship between EI and self-compassion in ambulance staff and other health care workers. Neff (2003a) proposed that self-compassion should be positively related to EI, as both involve the ability to observe one's emotions and use this to effectively inform thoughts and behaviours. One study found a positive relationship between EI and self-compassion in nurses (Şenyuva et al., 2014). Further research may help to determine the effects of both on wellbeing in staff.

Conclusion

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

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