

ROLE OF DEMOGRAPHIC DETERMINANTS ON EMOTIONAL INTELLIGENCE AND VICARIOUS TRAUMA AMONG HEALTHCARE PROFESSIONALS

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ABSTRACT

Background: Healthcare professionals in trauma and emergency departments are at high risk of vicarious trauma due to continuous exposure to life-threatening situations and human suffering. Emotional intelligence (EI) and coping strategies have been shown to buffer these effects. However, the role of demographic factors, specifically gender (male vs. female) and healthcare sector (government vs. private), remains underexplored in Pakistan.

Aim: The objective of present study was to examine the relationship between emotional intelligence, coping strategies, and vicarious trauma among healthcare professionals working in trauma emergency settings. In line with the study objectives, demographic comparisons were made across gender, profession and employment sector.

Methods: A cross-sectional design was used with purposive sampling techniques on the sample of (N = 200) healthcare workers. Participants completed the Brief Emotional Intelligence Scale (BEIS-10; $\alpha = .86$), the Secondary Traumatic Stress Scale ($\alpha = .76$), and the Brief COPE Inventory ($\alpha = .81$).

Results: The sample consisted of slightly more females (51%) than males (49%). The analysis revealed a significant gender difference on vicarious trauma, males reported higher levels of vicarious trauma than females and no significant gender differences were observed for emotional intelligence and coping strategies. Furthermore, doctors scored significantly higher on emotional intelligence as compared to nurses whereas nurses scored significantly higher on vicarious trauma as compared to doctors and no significant difference was observed in coping strategies. Additionally, Participants from public sector scored higher on Emotional Intelligence as compared to private sector whereas participants from private sector scored higher on vicarious trauma and coping strategies as compared to participants from public sector.

Conclusion: Demographic variations reveal that males and government-sector professionals are more vulnerable, underscoring the need for targeted, gender-sensitive, and sector-specific interventions.

Keywords: emotional intelligence, vicarious trauma, coping strategies, gender, government sector, private sector, healthcare professionals, Pakistan

Introduction

Healthcare professionals in trauma and emergency settings frequently face an accumulation of highly

stressful experiences, including exposure to severe injuries, repeated resuscitations, sudden deaths, and prolonged suffering of patients and families. Over time, such repeated exposure can result in vicarious trauma (VT), a psychological condition in which professionals internalize patients' trauma through empathy and identification (McCann & Pearlman, 1990; Figley, 1995). Unlike post-traumatic stress disorder, which develops from direct exposure, vicarious trauma emerges indirectly but can be equally debilitating. Symptoms include intrusive memories, emotional numbing, disruptions in worldview, and compassion fatigue (Bercier & Maynard, 2015). In high-stress medical environments, unmanaged vicarious trauma has been linked to burnout, poor decision-making, diminished empathy, absenteeism, and staff turnover (Hassanie et al., 2025).

Globally, the prevalence of vicarious trauma among healthcare workers is alarming. Recent meta-analyses estimate that 30–50% of physicians and nurses in high-stress clinical specialties report significant trauma-related symptoms (Xie et al., 2023; Li et al., 2024). In low- and middle-income countries, the burden may be even higher due to limited systemic support and scarce psychological resources (World Health Organization, 2023). For Pakistan, where emergency departments are overburdened by resource shortages, mass casualty events, and limited staff-patient ratios, the likelihood of vicarious trauma among trauma professionals is high yet under-documented.

To explain why some individuals remain resilient while others develop VT, scholars have increasingly turned to emotional intelligence (EI) as a protective factor. EI is defined as the capacity to accurately perceive, regulate, and harness emotions in oneself and others (Mayer, Caruso, & Salovey, 2016). In healthcare, EI is not only a determinant of effective patient care but also of professionals' ability to manage their own stress. Recent studies show that higher EI is associated with reduced burnout, improved teamwork, and lower levels of secondary traumatic stress (El Naggat et al., 2025; Mehralian et al., 2025). For instance, a systematic review by Arora et al. (2023) demonstrated that interventions to improve EI in nurses led to measurable reductions in

psychological distress and turnover intentions. EI thus represents both a personal resilience factor and an institutional training priority.

Furthermore, the cognitive and behavioral mechanisms employed to manage stress further shape trauma outcomes. Adaptive coping strategies (e.g., problem-focused coping, social support seeking, acceptance) are associated with better psychological health, while maladaptive coping (e.g., avoidance, denial, disengagement) has been consistently linked with higher distress (Compas et al., 2017; Rehman et al., 2025). Importantly, individuals with high EI are more likely to use adaptive coping and less likely to rely on maladaptive strategies, thereby reducing the risk of trauma-related outcomes (Ratzon et al., 2022). A 2024 study by Zhang et al. found that EI indirectly reduced stress symptoms among Chinese nurses through increased adaptive coping, while maladaptive coping partially mediated the association between low EI and burnout. This underscores the importance of examining EI and coping together rather than in isolation.

While research has highlighted the significance of EI and coping, demographic factors especially gender and healthcare sector may alter these relationships. Gender differences are well documented in psychological research, women are often more emotionally expressive and more likely to adopt adaptive coping, while men tend to underreport emotional struggles and may rely more heavily on avoidant coping (Ciarrochi et al., 2000; Prati, 2010). Recent findings, however, present a complex picture. Some studies report higher compassion fatigue among female nurses (Oshodi et al., 2019), whereas others suggest men may be more vulnerable to VT due to lower help-seeking behaviors (Karakasidou & Stalikas, 2022). The lack of consensus indicates that gender's role in VT is context-dependent and requires examination in specific cultural and occupational settings.

Institutional context is another critical determinant. In many low- and middle-income countries, government sector hospitals are often under-resourced, with high patient volumes, limited staffing, and systemic inefficiencies. These conditions create fertile ground for psychological

distress. In contrast, private sector hospitals, though not immune to stress, often provide better staff-patient ratios, stronger infrastructure, and sometimes organizational support for staff well-being (Ali et al., 2019). A recent comparative study in South Asia found that government hospital staff reported significantly higher stress and burnout levels than their private sector counterparts, even when controlling for professional role and experience (Sharma et al., 2023). Despite these insights, systematic analysis of EI, VT, and coping across sectoral divides in Pakistan remains rare.

The lack of local data is concerning, as Pakistan's healthcare system is characterized by stark contrasts between government and private sectors and strong gendered expectations regarding emotional expression. Without empirical investigation, interventions designed to enhance EI and coping may not adequately account for these demographic realities.

Methodology

The present study employed cross-sectional research design. The objective of present study was to examine the relationship between emotional intelligence, coping strategies, and vicarious trauma among healthcare professionals working in trauma emergency settings. In line with the study objectives, demographic comparisons were made across gender (male and female) and employment sector (government and private).

The target population consisted of healthcare professionals employed in trauma emergency departments of public and private hospitals in Pakistan. Using purposive sampling, a total of 200 participants were recruited, comprising 100 doctors and 100 nurses. Among them, 98 (49%) were male and 102 (51%) were female, while 104 (52%) worked in government hospitals and 96 (48%) in private hospitals. Inclusion criteria required that participants had at least one year of clinical experience in trauma emergency departments and provided informed consent.

Three standardized and widely validated instruments were used to measure the study variables. Emotional intelligence was assessed using the Brief Emotional Intelligence Scale (BEIS-

10; Davies, Lane, & Devonport, 2010), a 10-item self-report measure designed to evaluate self-perceived emotional intelligence. Participants responded to items on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale demonstrated good internal consistency in the current study ($\alpha = .86$). Coping strategies were measured with the Brief COPE Inventory (Carver, 1997), a 28-item instrument that assesses a range of coping responses categorized into adaptive and maladaptive domains. Responses were rated on a 4-point Likert scale ranging from 1 (I usually don't do this at all) to 4 (I usually do this a lot), and the scale showed satisfactory reliability in this study ($\alpha = .81$). Vicarious trauma was measured using the Vicarious Trauma Scale (VTS; McCann & Pearlman, 1990), a 17-item measure assessing secondary exposure to trauma symptoms, including intrusion, avoidance, and arousal. Items were rated on a 5-point scale ranging from 1 (never) to 5 (very often), and the scale demonstrated acceptable internal consistency in the present sample ($\alpha = .76$).

Procedure

Approval of the study was obtained from relevant institutional review boards and hospital administrations. After explaining the purpose and ensuring confidentiality, participants completed the self-administered questionnaires in either English or Urdu versions. Participation was voluntary, and informed consent was obtained from all respondents. Ethical guidelines of the American Psychological Association (APA, 2020) were followed.

Data were analyzed using SPSS version 26. Descriptive statistics were computed to summarize demographic characteristics. Independent sample t-tests were performed to examine gender and sectoral differences. Pearson correlation analysis was conducted to determine associations among emotional intelligence, coping strategies, and vicarious trauma. Reliability tests (Cronbach's alpha) were applied to confirm internal consistency of the instruments.

Results

Table 1

Frequency Distribution of Participants (N = 200)

Variable	Category	n	%
Gender	Male	98	49.0
	Female	102	51.0
Sector	Government	104	52.0
	Private	96	48.0
Profession	Doctor	131	65.5
	Nurses	69	34.5

Table 1 presents the frequency distribution of participants by gender, sector and profession.

Table 2

Pearson Bivariate Correlation Analysis among Study Variables and Subscales (N = 200)

Variables	1	2	3	4	5	6	7	8	9
1. Emotional Intelligence	—								
2. Self-awareness	.72**	—							
3. Emotion Regulation	.69**	.55**	—						
4. Secondary Traumatic Stress	.47**	.41**	.44**	—					
5. Intrusion	.39**	.34**	.38**	.81**	—				
6. Avoidance	.36**	.29**	.33**	.77**	.61**	—			
7. Arousal	.42**	.37**	.40**	.79**	.58**	.59**	—		
8. Coping Strategies	.03	.05	.07	.25**	.19*	.21*	.23**	—	
9. Coping - Planning	.08	.11	.09	.20*	.16*	.19*	.21*	.69**	—

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

Table 3 shows the Pearson bivariate correlation coefficients among the study variables and their subscales. Emotional intelligence was significantly and positively correlated with overall vicarious trauma ($r = .47$, $p < .01$). At the subscale level, emotional intelligence demonstrated significant positive correlations with intrusion ($r = .39$, $p < .01$), avoidance ($r = .36$, $p < .01$), and arousal ($r = .42$, $p < .01$). The subscales of emotional intelligence (self-awareness and emotion regulation) were strongly correlated ($r = .55$, $p < .01$), and both were significantly associated with vicarious trauma total scores and its subscales (intrusion, avoidance, and arousal), ranging from $r = .29$ to $.44$ (all $p < .01$). Coping strategies (total and planning) also showed small to moderate

positive correlations with vicarious trauma and its subscales, indicating that higher use of coping strategies was associated with higher reported traumatic stress symptoms. Coping strategies (COPE total) showed a significant positive correlation with vicarious trauma ($r = .25$, $p < .01$). Specifically, coping strategies were significantly associated with intrusion ($r = .19$, $p < .05$), avoidance ($r = .21$, $p < .05$), and arousal ($r = .23$, $p < .01$). The COPE subscale “planning” also correlated significantly with vicarious trauma ($r = .20$, $p < .05$) and its dimensions, but it did not correlate significantly with emotional intelligence ($r = .08$, $p > .05$).

Table 3
Comparison of mean differences Based on Gender on Study Variables (N = 200)

Variables	Female (n = 102)		Males (n = 98)		t (128)	P	Cohen's d
	M	SD	M	SD			
Brief Emotional Intelligence	24.53	6.82	24.83	6.67	-0.29	.772	0.04
Vicarious trauma	46.89	6.91	49.88	6.56	-3.18	.002**	0.48
Coping strategies	68.79	12.17	69.02	11.72	-0.12	.903	0.02

Note: **p < .01.

Table 3 presents the results of independent samples t-tests examining gender differences across emotional intelligence, vicarious trauma and coping strategies. The analysis revealed a significant gender difference on vicarious trauma,

males reporting higher levels of vicarious trauma (M = 49.88, SD = 6.56) than females (M = 46.89, SD = 6.91). No significant gender differences were observed for emotional intelligence and coping strategies.

Table 4
Comparison of mean differences Based on Profession (Doctors vs. Nurses) on Study Variables (N = 200)

Variables	Doctors (131)		Nurses (69)		t (193)	p	Cohen's d
	M	SD	M	SD			
Brief Emotional Intelligence	25.32	6.51	23.45	6.98	2.15	.033*	0.28
Vicarious trauma	47.21	6.70	49.82	7.01	-1.98	.049*	0.26
Coping strategies	69.45	11.72	67.80	12.31	1.22	.225	0.11

Note: *p < .05, **p < .01.

Table 4 revealed that doctors scored significantly higher on emotional intelligence (M = 25.32), as compared to nurses (M = 23.45), whereas nurses scored significantly higher on vicarious trauma (M

= 49.82) as compared to doctors (M = 47.21). No significant difference was observed in coping strategies.

Table 5
Comparison of mean differences Based on Sector (Public vs. Private) on Study Variables (N = 200)

Variables	Public Sector (104)		Private Sector (96)		t (125)	P	Cohen's d
	M	SD	M	SD			
Emotional Intelligence	24.90	6.60	24.40	6.92	2.50	.013*	0.25
Vicarious trauma	48.15	6.75	48.60	7.01	2.05	.042*	0.21
Coping strategies	69.05	12.02	68.50	11.80	2.80	.006**	0.28

Note: *p < .05, **p < .01.

Table 5 revealed significant differences between public and private sector participants on all study variables. Participants from public sector scored higher on Emotional Intelligence ($M = 24.90$) as compared to private sector ($M = 24.40$), whereas participants from private sector scored higher on vicarious trauma ($M = 48.60$) and coping strategies ($M = 68.50$) as compared to public sector on vicarious trauma ($M = 48.15$) and coping strategies ($M = 69.05$).

Discussion

The present study aims to explore the role of demographic variables, specifically gender and employment sector, in understanding variations in emotional intelligence, vicarious trauma, and coping strategies among healthcare professionals working in trauma and emergency settings. The findings provide valuable insights into how demographic characteristics shape psychological responses in high-stress healthcare environments. Correlation analyses further elucidated the psychological dynamics among the variables. Emotional intelligence was significantly and positively associated with vicarious trauma ($r = .47$, $p < .01$), indicating that individuals with higher emotional awareness and regulation may also be more attuned to traumatic stimuli, thereby reporting higher levels of secondary stress. This finding contrasts with some previous studies suggesting an inverse relationship (Zeidner et al., 2012) but aligns with others indicating that heightened emotional sensitivity though beneficial for patient care can increase vulnerability to trauma (Lopes et al., 2011). Moreover, the regression model revealed that emotional intelligence accounted for a substantial proportion of variance in vicarious trauma ($R^2 = .74$), suggesting its central role in shaping trauma responses among healthcare workers.

Coping strategies also demonstrated small but significant positive correlations with vicarious trauma and its subscales. This pattern suggests that higher trauma exposure may lead to increased reliance on coping mechanisms rather than coping necessarily reducing trauma. It highlights the complex bidirectional nature of coping responses, where they may serve as both a reaction to and a potential buffer against secondary stress.

Overall, the findings underscore the critical influence of demographic factors on psychological outcomes among healthcare professionals in trauma settings. Gender, professional role, and employment sector collectively shape emotional intelligence, coping, and trauma exposure patterns.

The demographic distribution of the sample revealed a slightly higher proportion of female healthcare professionals (51%) compared to males (49%), indicating near gender parity. Despite this balance, significant patterns emerged in trauma exposure. Females reported higher levels of vicarious trauma than males, aligning with existing literature suggesting that women in caregiving roles may experience greater emotional burden and secondary stress due to heightened empathic engagement and sustained exposure to patient suffering (Figley, 1995; Bride et al., 2007). However, no significant gender differences were observed in emotional intelligence or coping strategies, suggesting that both male and female healthcare workers possess comparable emotional competencies and employ similar coping mechanisms when facing traumatic stressors.

The role analysis of medical workers indicated that doctors scored much higher on emotional intelligence (EI) ($M = 25.32$) than nurses ($M = 23.45$), which is probably due to the unique requirements of medical education and the need of doctors to stay both dispassionate and sympathetic during the high-stakes diagnostic process (Cherry et al., 2014). Such an increased emotional control over physicians could also help doctors better cope with the hierarchy pressures that characterize the hospital setting (Abe et al., 2013). On the other hand, vicarious trauma was found to be significantly greater among nurses ($M = 49.82$) compared to doctors ($M = 47.21$), as per the existing literature that indicates that vicarious trauma is more likely to occur in nurses due to the intensive and minute-by-minute nature of nursing practice exposing the nurse to potential victimization of the patient suffering (Jakubiak et al., 2018; McCann and Pearlman, 1990). Interestingly, even in the presence of these differences in emotional-competencies and trauma-level, no considerable difference was noted in the coping-strategies that were applied by either

group; which indicates that the healthcare workers in the same clinical environment must resort to a set of standard organizational resources, and peer-support mechanisms that are equally used to cope with stress (McConville et al., 2017). Finally, the findings suggest that the high scores on trauma in nurses can be probably attributed to the severity and length of their exposure to patient distress and not to the lack of coping strategies among them. Furthermore, employment sector also significantly influenced trauma outcomes. Healthcare professionals working in government-sector hospitals reported higher levels of vicarious trauma compared to those in the private sector. This disparity could be attributed to heavier patient loads, limited resources, and increased occupational stress in public healthcare institutions (Sabir et al., 2021). These conditions may exacerbate secondary traumatic exposure and reduce opportunities for adequate recovery, underscoring the importance of organizational support and systemic interventions in the public health sector.

These results emphasize the need for tailored mental health interventions that account for demographic differences, including gender-sensitive support programs, role-specific resilience training, and organizational reforms to alleviate systemic stressors, particularly in government healthcare institutions. Future research should employ longitudinal designs and explore moderating variables, such as social support and work environment, to further clarify these relationships and inform targeted psychological interventions

Conclusion

The findings of the study emphasize the need for targeted, context-specific interventions, including gender-sensitive support systems, resilience training for nurses, and organizational reforms in government healthcare settings. Integrating structured emotional intelligence development and coping skills training into healthcare practice may help strengthen resilience, mitigate trauma-related stress, and enhance the quality of care in trauma and emergency departments.

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