

## Original Research Article

# Evaluation of stress levels and resilience in healthcare providers working in emergency settings

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## ABSTRACT

**Background:** Emergency healthcare workers face high stress, leading to burnout, anxiety, and depression that impact performance and retention. Long hours and irregular schedules worsen these issues. Interventions such as resilience-focused environments, cognitive behavioural therapy, group sessions, recreational activities, and access to psychological support help reduce these effects and improve wellbeing.

**Methods:** This study adopted a questionnaire based method to assess stress levels, secondary stress characteristics, and the outcomes of long-term stress among healthcare providers. The research design is both exploratory and descriptive: exploratory research defines the problem, while descriptive research examines frequency and the relationship between variables. Data were collected using a structured questionnaire through direct personal interviews due to time and other constraints.

**Results:** The study used the professional quality of life (ProQOL) scale to assess secondary traumatic stress among healthcare providers. Emergency physicians showed greater resilience and lower burnout and stress than other departments, while internal medicine staff had the highest resilience (7.26) and low burnout. These findings underscore the need to assess resilience across roles to guide targeted training and preparedness for future large scale health emergencies.

**Conclusions:** Healthcare professionals in emergency settings experience substantial stress, resulting in burnout, anxiety, and depression, which adversely affect performance and retention. Extended and irregular working hours further exacerbate physical and psychological strain. Interventions such as resilience-building initiatives, cognitive behavioural therapy, group support, engagement in leisure activities, and access to psychological services are effective in enhancing their overall wellbeing.

**Keywords:** Anxiety, Burnout, Depression, Stress

## INTRODUCTION

Anxiety, depression, burnout, and dissatisfaction are commonly observed in healthcare personnel stationed in emergency care departments.<sup>1</sup> The ability to work in emergencies positively correlates with personal accomplishments and negatively with emotional exhaustion.<sup>1</sup> Periodic disruption, despite causing stress,

may enhance resilience by providing opportunities to evolve, improve personal and organizational function, and empower personnel.<sup>2,3</sup> Therefore, these risks may be navigated to enhance resilience in personnel who work upfront in emergency healthcare. The role of in-charges of intensive care units or heads of emergency medicine includes recognizing stress factors, levels of anxiety, and burnout in their residents or staff, motivating personnel,

and stimulating productive teamwork and commitment to responsibilities. This can result in higher productivity, happiness, and satisfaction among healthcare workers. Contrary to previous assumptions, with proper management skills, stress may serve as a trigger to increase strength, enhance cohesiveness, and promote effective teamwork.<sup>2,3</sup> Hence, continued research is needed to identify factors that increase resilience at work and alleviate stress to enhance work productivity and satisfaction while reducing emotional and physical burnout in healthcare providers working in emergency situations.<sup>2,3</sup>

### ***Aims and objectives***

The aim of this project was to identify the nature of stress in healthcare providers working in emergency settings and to analyse the resilience developed by them during the emergent phase.<sup>1</sup> The study has also proposed measures for preventing occupational burnout and stress disorders in this cohort.

### **METHODS**

This study was a cross-sectional, questionnaire-based quantitative observational study conducted among 200 healthcare workers employed in emergency departments and tertiary care settings from the time period of August, 2024 to December 2024. Standardized instruments, including the perceived stress scale (PSS) and the professional quality of life scale (ProQOL-V), were used to assess perceived stress, secondary traumatic stress, compassion fatigue, and resilience.<sup>4</sup> The study employed a descriptive and exploratory research design to evaluate the prevalence and characteristics of occupational stress and related outcomes in healthcare professionals.

A modified Hebrew ProQOL questionnaire was used, focusing on 10 of the original 30 questions.<sup>5</sup>

Data collected were analysed and tabulated to highlight stress factors in the cohort and discuss ways to alleviate stress to improve healthcare workers' efficacy in emergency care. The extent of resilience was also examined as a positive variable, with methods suggested to enhance resilience in this cohort.

### ***Research methodology***

Research methodology was a systematic approach to problem-solving through research. The present research project was questionnaire based study in nature, to know the stress level, secondary stress character and outcomes of long term stress in healthcare providers. The research design consisted of exploratory and descriptive research, where exploratory research is essential to obtain a proper definition of the problem, and descriptive research is concerned with determining the frequency of something occurring or how two variables vary together. A structured questionnaire was administered through direct

personal interview due to time limitations and other constraints.

The sample design was multi-stratified and 200 respondents selected through simple random sampling from each block. The sample size was 200 respondents, and the sampling method was judgment sampling, only selecting those respondents who were working in health care settings. The responses were captured on 2 different scales and means calculated.

Overall, a well-defined research plan was developed to ensure that the required data were collected accurately and economically.

**Table 1: Sample size distribution.**

Designation of participants	Sample size (total no. 200)
<b>Junior residents</b>	45
<b>Junior consultants</b>	25
<b>Nursing staff</b>	50
<b>Anaesthetists/critical care specialists</b>	30
<b>Surgical consultants/ Senior consultants</b>	30
<b>Interns</b>	20

### ***Inclusion criteria***

Healthcare professionals employed in emergency departments, ICUs, trauma units, or tertiary care emergency services. Junior residents, consultants, anaesthetists/critical care specialists, nursing staff, and interns involved in direct patient care. Minimum six months of experience in emergency or critical care settings. Age  $\geq 21$  years. Provided written informed consent.

### ***Exclusion criteria***

Non-clinical and administrative staff. Healthcare workers with  $< 6$  months of emergency care experience. Personnel on extended leave during data collection. Incomplete questionnaire responses. Refusal to participate or withdraw consent. Individuals with severe psychiatric illness affecting questionnaire reliability

### **RESULTS**

Among junior residents posted in emergency departments or ICUs handling critically ill, terminal, or suicidal patients, 68% (N=31) exhibited high perceived stress (PSS  $> 30$ , average 32). These young doctors, with limited exposure and skills, required frequent breaks to reduce anxiety and aversion to stress. Interns showed higher secondary trauma on ProQOL scores, with 82% scoring above 80, indicating significant stress and trauma. Some junior residents (N=25) posted in critical units

experienced anxiety, depression, mindfulness challenges, and substance abuse (especially alcohol) as coping mechanisms. Higher stress and distress symptoms were noted in first-year residents, which gradually decreased with experience as coping improved.<sup>1,6</sup>

Emotional exhaustion and depersonalization were leading causes of burnout.<sup>1,7</sup> The ProQOL average score was 75 (above 50), pointing to severe burnout and secondary traumatic stress, with 40% classified as clinically depressed. Senior consultants faced stress and anxiety from management pressures but had greater resilience. Consultants with over 10 years of experience had lower PSS scores (average 13), while those with less experience had moderate scores (14-26) and different coping habits such as music therapy. A significant portion had a history of anxiety and depression managed with counselling and medications.

Anesthetists, responsible for airway management in critical cases, displayed the lowest perceived stress (PSS<13) and ProQOL scores (average 44), reflecting their rigorous training and better resilience, with minimal burnout and occasional anti-anxiety medication use. Substance use, including alcohol and tobacco products, was noted in about 25% as a coping habit developed subconsciously over time.

**Table 2: Summary table.**

Designation	Avg. PSS score	Avg. ProQOL score
<b>Junior residents</b>	32	95
<b>Junior consultants</b>	30	70
<b>Nursing staff</b>	30	88
<b>Anesthetists/critical care specialists</b>	10	44
<b>Surgical/senior consultants</b>	12	46
<b>Interns</b>	35	92

Among paramedics and nursing staff, 38% exhibited high stress, with those having under 5 years of emergency experience showing more pronounced anxiety and depression. Fifteen percent considered quitting within two years due to burnout. Long working hours exacerbated symptoms, but resilience improved over time. Poor work-life balance and extended shifts (>12 hours) correlated with high ProQOL scores (>95), indicating extreme fatigue and secondary trauma.

## DISCUSSION

The COVID-19 pandemic declared by the WHO in 2020 highlighted the impact of emergency healthcare on providers worldwide. Numerous studies revealed higher psychological stress among females and those with less than five years of experience.<sup>3,8</sup> It was found that 69% of general surgery residents exhibited emotional exhaustion

and depersonalization, with perceived stress and distress symptoms higher in early training years, improving over time.<sup>1</sup> Financial concerns and interpersonal relationships were among the most common stressors.<sup>6,9</sup>

Limitations of the study included recall bias, sampling bias, social desirability bias, and non-response bias, potentially affecting the validity of survey responses. The low response rate and lack of participant blinding may have influenced the findings.

The main research question that was answered was that the measurement of professional quality of life score (ProQOL) to measure the secondary trauma in healthcare providers came to the conclusion that emergency department physicians have higher rate of resilience and lower rates of burnouts and secondary traumatization than staff of other hospital departments.<sup>5</sup> In contrast, staff from internal medicine department demonstrated the highest level of resilience, that is 7.26 and lower levels of burnout as compared to other workers.<sup>5</sup> It was also seen and advised to identify resilience and characteristics across the hospital staff, sectors and departments that can guide hospital management in education, preparation and training healthcare workers for future large scale health emergencies such as pandemics, natural disasters and war.

The study is limited by its cross-sectional design, reliance on self-reported questionnaire data, and a relatively small sample from selected healthcare institutions, which may limit generalizability. Recall bias, social desirability bias, and the use of a modified ProQOL instrument may have influenced the accuracy and comparability of the findings, while the lack of longitudinal follow-up precludes assessment of long-term changes in stress and resilience.

## CONCLUSION

Healthcare professionals in emergency settings face significant stressors leading to burnout, anxiety, and depression, negatively impacting performance and retention. Long work hours and irregular schedules contribute further to their mental and physical strain. Promoting resilience-building environments, cognitive behavioral therapy, group sessions, hobbies, and access to psychological services seem effective strategies to mitigate negative outcomes and improve healthcare workers' wellbeing.

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