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Workload and Burnout Among Emergency Responders: The Mediating Role of Psychological Resilience

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Abstract

Emergency responders operate in high-stress environments characterized by demanding workloads, unpredictable tasks, and intense job pressures, which increase their susceptibility to burnout. Psychological resilience is identified as a critical factor in mitigating the negative effects of occupational stress, yet its mediating role between workload and burnout remained underexplored in emergency healthcare settings. This study examined the relationship between workload, burnout, and psychological resilience among emergency responders at Al-Bashir Hospital. Using a quantitative research design, data were collected from 293 emergency responders through a structured questionnaire. The study employed descriptive statistics, correlation analysis, reliability and validity assessments, and structural equation modeling (SEM) to test the proposed hypotheses.

Findings revealed that workload significantly increased burnout, with job demands, work intensity, and task complexity being key contributors. Psychological resilience demonstrated a strong negative association with burnout, confirming its role as a protective factor against occupational stress. Mediation analysis showed that resilience partially mediated the relationship between workload and burnout, indicating that while workload directly contributed to burnout, its impact was significantly reduced when resilience levels were high. The results highlighted the need for workload management strategies, resilience training programs, and organizational support mechanisms to reduce burnout among emergency responders. Practical implications emphasized the importance of mental health policies, resilience-focused interventions, and leadership support in enhancing emergency responders' well-being and performance. Future research should explore longitudinal studies and additional psychosocial factors influencing resilience and burnout in high-risk professions.

Keywords: Workload, Burnout, Psychological Resilience, Emergency Responders, Occupational Stress, Mediation Analysis, Al-Bashir Hospital.

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1. Introduction

Emergency responders play a critical role in protecting public safety by offering medical assistance, managing disasters, and responding to crises (Elkady et al., 2022; Botan et al., 2023). Their responsibilities go beyond emergency action—they also help prepare communities, raise public awareness, and strengthen resilience, highlighting their central role in emergency systems (Samsudin et al., 2022). However, their work environment is often unpredictable and intense, placing significant physical, mental, and emotional pressure on them (Davidson et al., 2021).

These professionals work across various sectors, including healthcare, firefighting, policing, and disaster management, where they must quickly adapt and function effectively under pressure (Jellestad et al., 2021; Woodman et al., 2021). Their jobs require coordination with other agencies, but organizational practices and communication differences can create additional stress (Power et al., 2024). Continuous exposure to trauma, long shifts, and high-stakes decisions increases their vulnerability to burnout, anxiety, and PTSD (Tjin et al., 2022; May et al., 2023).

Heavy workloads are a major source of this stress. Extended hours, limited rest, and constant mental demands reduce performance and increase the risk of burnout and depression (Bevan et al., 2022; Woodman et al., 2021). Irregular or prolonged shifts interfere with sleep and cognitive ability, raising the chances of mistakes (Tjin et al., 2022). Broader organizational issues like staffing shortages, excessive paperwork, and poor access to mental health care worsen this burden (Bevan et al.,

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2022). Additionally, balancing intense work demands with personal responsibilities often leads to emotional strain and reduced life satisfaction (Tjin et al., 2022).

The nature and intensity of emergencies can vary significantly, with calm moments interrupted by sudden, high-demand events like mass-casualty incidents (Shao et al., 2024; Wozniak & Zahabi, 2024; Hunt et al., 2023). These fluctuations lead to emotional exhaustion, detachment, and decreased professional performance—key signs of burnout (Gualano et al., 2021; Pennington et al., 2023). Burnout, driven by long-term stress, is common in this field and is marked by fatigue, reduced empathy, and a diminished sense of success, which negatively affect job quality and patient outcomes (Diggin et al., 2023; La Manna et al., 2025). Over time, this stress can also cause health problems such as heart disease and chronic fatigue (Bevan et al., 2022).

Factors like high workloads, frequent exposure to trauma, unpredictable calls, and understaffing increase pressure while reducing recovery time (Sporer, 2021; Thielmann et al., 2024). Struggles to maintain work-life balance further add to the mental toll, straining personal relationships and professional resilience (Hu et al., 2024). Addressing these challenges requires coordinated solutions that manage workloads, strengthen mental health systems, and foster resilience (Gualano et al., 2021).

Resilience—adapting and recovering in difficult situations—is a valuable resource for emergency responders, helping protect against stress-related mental health conditions (Pink et al., 2021). Grounded in stress adaptation theory, resilience is shaped by emotional strength, cognitive strategies, and social support that enable

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individuals to stay steady under pressure (Rossouw et al., 2024). Coping skills, emotional control, and supportive relationships increase resilience, reducing burnout risk (O'Neil & Kruger, 2022; Mao et al., 2022). Research shows that resilient individuals experience fewer PTSD symptoms, better problem-solving, and sustained performance under stress (Thielmann et al., 2024; Williams, 2021). Team-based support systems—such as peer groups, mentorship, and institutional encouragement—also play a key role in building resilience and a sense of belonging (Jaeger et al., 2021). Programs using mindfulness, cognitive behavioral methods, and stress management have increased resilience in emergency workers (Rossouw et al., 2024). Given its importance in protecting health and job performance, resilience training should be integrated into emergency responder development (Hesketh & Tehrani, 2024).

At Al-Bashir Hospital, Jordan's largest public healthcare facility, emergency responders face pressure from high patient volumes, limited resources, and emotionally taxing situations. These conditions contribute to ongoing stress, long working hours, and exhaustion, harming staff well-being and patient care quality (Bevan et al., 2022; Hu et al., 2024). Without interventions, burnout may increase staff turnover, hinder team effectiveness, and weaken the hospital's emergency capacity (Davidson et al., 2021).

Although previous research has shown a connection between workload and burnout, few studies have examined how psychological resilience might influence this relationship (Thielmann et al., 2024). Most studies focus on external stressors, often overlooking resilience as a potential protective factor (Mao et al., 2022).

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Furthermore, existing resilience research often centers on military and law enforcement settings, leaving a gap in understanding hospital-based emergency responders who face distinct emotional and institutional pressures (Hesketh & Tehrani, 2024).

This study explores the impact of workload on burnout among emergency responders at Al-Bashir Hospital, focusing specifically on whether psychological resilience mediates this relationship. It examines how workload and resilience interact and how resilience might reduce burnout's effects. The study also provides policy recommendations to improve workload management, mental health services, and resilience-building efforts to support frontline workers better.

By incorporating resilience into existing models of occupational stress, this research enhances understanding of how responders manage extreme work demands in limited-resource environments. Mediation analysis offers deeper insight into how resilience functions as a protective factor, with findings that can shape hospital policies, training programs, and support systems to help emergency responders cope effectively with workplace challenges.

2. Literature Review

2.1 Workload Among Emergency Responders

Emergency responders face a demanding workload, including mental, physical, and emotional pressures, all intensified by high-stress environments (Samsudin et al., 2021). Mentally, they must make quick decisions, maintain awareness, and solve problems in fast-paced situations, often with little time to reflect (Wozniak & Zahabi, 2024). Constantly processing large volumes of information requires sharp

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focus and quick thinking, adding to cognitive fatigue (Marciniak, 2023). Physically, responders perform strenuous tasks such as lifting patients, delivering urgent care, and operating in hazardous conditions, which can result in fatigue and musculoskeletal strain (Marvin et al., 2023). These demands are heightened by long shifts, lack of rest, and irregular hours, contributing to ongoing physical exhaustion (Hunt et al., 2023). Emotionally, repeated exposure to trauma, patient suffering, and life-or-death situations take a toll on their mental health (Bevan et al., 2022).

Several factors influence workload intensity, including shifts' length and unpredictability, tasks' complexity, and high patient loads. Responders often exceed standard working hours, leading to chronic fatigue and reduced mental clarity (Koski et al., 2022). They frequently manage multiple emergencies at once, adjust to rapidly changing scenarios, and coordinate with different teams, all of which increase pressure (Shao et al., 2024). In overcrowded hospitals, limited resources and high patient volumes further strain their capacity to provide quality care and recover between calls (Hu et al., 2024). This intense workload has significant physical and mental consequences. Physically, it can lead to sleep problems, chronic fatigue, cardiovascular conditions, and workplace injuries (Marvin et al., 2023). Long hours are linked to hypertension, musculoskeletal pain, and metabolic disorders caused by sustained stress (Hunt et al., 2023). Mentally, heavy workloads are associated with cognitive overload, emotional exhaustion, and job dissatisfaction (Bevan et al., 2022). Under extreme pressure, responders may lose focus, detach emotionally, and experience anxiety, all of which reduce their ability to make sound decisions (Davidson & Sanderson, 2022). Fatigue also increases the

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risk of mistakes impacting patient safety (Larraga-García et al., 2024). Workload-related stress affects individuals and disrupts team performance and organizational stability. High demands weaken teamwork, contribute to conflict, and lead to higher absenteeism and staff turnover (Hu et al., 2024). Limited recovery time between cases hinders collaboration and reduces the effectiveness of emergency response services (Samsudin et al., 2021).

Extensive research has confirmed that excessive workloads are a major factor contributing to burnout in emergency responders (Basnawi et al., 2024). Burnout presents as emotional fatigue, detachment, and a reduced sense of purpose—outcomes strongly linked to long-term stress (Somville et al., 2024). Prolonged exposure leads to irritability, low motivation, and emotional withdrawal, often as a coping mechanism (Hu et al., 2024). Burnout is also tied to dissatisfaction at work and a higher risk of professionals leaving the field (Marciniak, 2023). As staff leave, remaining workers face greater demands, perpetuating a cycle of stress and burnout (Bevan et al., 2022; Somville et al., 2024). Workload remains one of the strongest predictors of burnout among emergency personnel (Koski et al., 2022). Without targeted action, chronic overwork can harm long-term health, lower job performance, and compromise patient care (Hu et al., 2024). Addressing these challenges through better staffing, equitable task distribution, and robust mental health support is essential to reducing burnout and building resilience in emergency teams (Cabrera et al., 2024).

2.2 Burnout in Emergency Responders

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Burnout is a psychological condition caused by long-term exposure to work-related stress, especially in high-pressure jobs like emergency response. Maslach's Burnout Theory states that burnout consists of three key symptoms: emotional exhaustion, depersonalization, and a reduced sense of personal achievement (Gualano et al., 2021). Emotional exhaustion refers to the persistent fatigue responders feel after prolonged stress (Vagni et al., 2022). Depersonalization occurs when they emotionally distance themselves from patients, often as a coping mechanism (Sporer, 2021). A low sense of accomplishment develops when individuals feel ineffective in their roles, leading to disengagement and dissatisfaction (Somville et al., 2024). The Job Demands-Resources (JD-R) Model explains burnout as an imbalance between high job demands and limited support. In emergency care settings, this imbalance is intensified by unpredictable shifts, heavy patient loads, and regular exposure to trauma, all of which raise burnout risk (Palafox, 2024; AbediKooshki & Arazli, 2024). Burnout affects responders' health and undermines the quality and safety of healthcare services (Thielmann et al., 2024).

Research shows that emergency responders' burnout rates are especially high compared to other healthcare workers (Gualano et al., 2021). Trauma nurses, paramedics, and ER physicians often face intense stress from dealing with life-threatening emergencies and patient suffering (Li et al., 2024; Hu et al., 2024). These repeated exposures increase emotional strain and the risk of mental health issues. A major cause of burnout is repeated exposure to traumatic events, such as severe injuries, death, and violence. These experiences contribute to emotional exhaustion, compassion fatigue, and secondary trauma (Pennington et al., 2023).

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Coupled with long hours, minimal recovery time, and constant cognitive demands, responders' energy and focus are quickly drained (Bevan et al., 2022).

Workplace conditions further intensify burnout. Inadequate staffing, poor resource availability, and excessive paperwork force responders to work beyond capacity (La Manna et al., 2025). In addition, poor leadership, lack of control over decisions, and vague job expectations reduce morale and increase mental strain (Bshait et al., 2024; AbediKooshki & Arazli, 2024).

Burnout has serious consequences for mental health. It is closely linked to anxiety, depression, and PTSD among emergency responders (Vagni et al., 2022). Chronic stress disrupts thinking, emotional stability, and resilience, making individuals more vulnerable to long-term psychological issues (Thielmann et al., 2024). In some cases, burnout may lead to substance abuse, emotional isolation, or even suicidal thoughts—especially when mental health support is lacking (La Manna et al., 2025). Job performance also suffers. Burned-out responders often experience poor concentration, reduced awareness, and slower reaction times, increasing the risk of medical errors and endangering patient safety (Somville, 2024). High burnout levels are associated with absenteeism, staff turnover, and low morale, all of which worsen staff shortages (Hu et al., 2024).

On a larger scale, unchecked burnout threatens the stability of emergency healthcare systems and weakens public health preparedness (Gualano et al., 2021). Hospitals that fail to address burnout face lower service quality, increased resignations, and deteriorating team performance (Sporer, 2021). To address these

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challenges, it is vital to implement strategies that manage workloads, promote resilience, and expand access to mental health support (Bevan et al., 2022).

2.3 Psychological Resilience as a Protective Factor

Psychological resilience is adapting, recovering, and maintaining emotional balance when facing stress and adversity, particularly in high-risk roles like emergency response (Pink et al., 2021). In workplace stress, resilience is essential for maintaining emotional and cognitive stability under pressure (Mao et al., 2022). The Transactional Model of Stress and Coping explains that resilience helps individuals assess stressful situations more clearly and use healthier coping strategies, reducing stress's impact (Hesketh & Tehrani, 2024). Similarly, the Conservation of Resources (COR) Theory suggests that those with higher resilience are better at preserving their emotional and psychological resources, helping them avoid burnout (Rossouw et al., 2024). Resilience is closely tied to adaptive coping methods, including problem-solving, emotional control, and shifting perspectives (Bevan et al., 2022). These strategies allow emergency responders to manage stress effectively by improving focus, managing emotions, and preventing negative reactions like emotional detachment or avoidance (Lowery & Cassidy, 2022). Integrating resilience into stress management frameworks equips responders to handle better the chronic challenges of their jobs, including trauma exposure and excessive workloads (Williams, 2021).

Research consistently shows that resilience can reduce the negative effects of burnout and occupational stress (Pink et al., 2021). It acts as a protective buffer, lowering the risk of emotional exhaustion, detachment, and reduced job satisfaction

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(O'Neil & Kruger, 2022). Responders with strong resilience report fewer symptoms of burnout, better mental health, and improved performance because they recover more quickly from stress and adapt more easily to changing demands (Rossouw et al., 2024). Studies highlight that resilience-building techniques such as mindfulness, stress management, and self-reflection can significantly lower burnout rates in emergency responders (Bevan et al., 2022). Those with higher resilience show stronger emotional regulation, sharper problem-solving skills, and better interpersonal communication, which improve their ability to cope under pressure (Thielmann et al., 2024).

Several factors, including formal training, supportive work relationships, and professional experience, contribute to resilience development. Structured resilience training programs have been shown to help responders manage stress and maintain performance during emergencies (Mao et al., 2022). Team support also plays a critical role—responders who feel connected to colleagues and supported by their peers tend to be more emotionally resilient and less likely to experience burnout (Lowery & Cassidy, 2022). Moreover, years of experience help build resilience as seasoned responders learn better emotional control and coping techniques over time (Jaeger et al., 2021). Recognizing its importance, many organizations now implement resilience-based programs to support mental health in emergency personnel (Hesketh & Tehrani, 2024). These programs often include cognitive-behavioral training, psychological counseling, and stress reduction workshops to prepare responders for high-stress situations (Rossouw et al., 2024). Evidence

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suggests such efforts improve flexibility, reduce emotional distress, and prevent stress-related health issues (Alshahrani et al., 2022).

Workplace culture also plays a vital role in supporting resilience. Environments that promote mental health awareness offer peer mentorship and include regular debriefings, foster a positive culture of coping, and encourage help-seeking behaviors (Bevan et al., 2022). Organizations with well-developed wellness and peer support systems report reduced burnout and higher morale among emergency staff (Williams, 2021). In the long term, resilience-focused interventions lead to greater job satisfaction, improved mental well-being, and more consistent job performance (Thielmann et al., 2024). Repeated exposure to resilience practices strengthens emotional control, adaptability, and overall resistance to burnout (Lowery & Cassidy, 2022). Therefore, integrating resilience-building into training programs and organizational policies is essential for maintaining a healthy, effective emergency workforce (Pink et al., 2021).

3. Methodology

3.1 Research Design

This study employed a quantitative, cross-sectional survey design to explore the relationship between workload, burnout, and psychological resilience among emergency responders at Al-Bashir Hospital. A quantitative approach was chosen for its ability to measure these variables systematically and apply statistical analysis to understand their connections, including the mediating role of resilience (Bao, 2024). The use of structured questionnaires ensured consistent data collection,

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allowing for reliable comparison across participants and supporting the study's goal of identifying patterns that could be generalized.

The cross-sectional design allowed for data collection at a single time point, offering a snapshot of burnout and workload levels among responders (Dutta, 2024). This method is widely used in occupational health research due to its efficiency in evaluating workplace stressors and related psychological outcomes (Setia, 2016). As both job demands and coping strategies shape burnout, the design was appropriate for capturing how psychological resilience varies among individuals facing similar work environments.

3.2 Study Population and Sampling

The study focused on emergency responders at Al-Bashir Hospital, including doctors, nurses, paramedics, administrative staff, and support personnel. These individuals are vital in delivering emergency medical care, managing hospital operations, and ensuring efficient responses to critical situations. The total workforce in the hospital's emergency department consists of 1,228 emergency responders, encompassing a diverse range of professional roles.

A probability sampling method was applied to ensure that the findings were representative and applicable to the broader population of emergency responders. Specifically, stratified random sampling was used to guarantee a proportional representation of different professional categories within the emergency department (Setia, 2016). This method ensured that doctors, nurses, paramedics, administrative staff, and support personnel were appropriately represented in the sample, minimizing selection bias (Taherdoost, 2016).

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The sample size was determined using Cochran's formula, a widely used method for calculating sample sizes in large populations. Using this formula, the initial sample size was determined and then adjusted to account for the total population of 1,228 emergency responders. This adjustment resulted in a final sample size requirement of 293 participants. A stratified sampling approach was used to ensure that the sample accurately reflected the diversity of roles within the hospital's emergency department. This method ensured that each category of emergency responders was proportionally represented, minimizing any potential bias in the findings.

The sample distribution was based on the estimated proportion of each professional group within the emergency department. By maintaining a balanced representation of doctors, nurses, paramedics, administrative staff, and support personnel, the study ensured that the findings were applicable across all roles within emergency medical services. Table 1 below provides an overview of the total population and the corresponding sample allocation for each emergency responder category.

Table 1: Population and Sample Distribution of Emergency Responders at Al-Bashir Hospital

Category	Population Count	Sample Count
Doctors	246	59
Nurses	492	118
Paramedics	307	74
Administrative Staff	123	30
Support Staff	62	15
Total	**1,228**	**293**

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3.3 Data Collection Methods

This study used a structured questionnaire as the primary data collection tool to examine the relationship between workload, burnout, and psychological resilience. The questionnaire was developed using established research frameworks to ensure it accurately captured the core variables. To accommodate participants' demanding schedules, the survey was offered in both digital and paper formats and was self-administered.

The instrument included sections on demographics, workload factors (e.g., job demands, complexity, unpredictability), burnout indicators (such as emotional exhaustion and disengagement), and resilience traits (including emotional regulation and cognitive flexibility). This structure allowed for a comprehensive assessment of how different aspects of emergency work affect mental well-being.

3.4 Measurement of Variables

A structured questionnaire was used to assess workload, burnout, and psychological resilience among emergency responders at Al-Bashir Hospital. Each variable was divided into distinct sub-categories, with five questions assigned to each, allowing for detailed measurement. Responses were captured using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), enabling participants to indicate varying levels of agreement.

Workload was evaluated across four main areas: job demands, pace and intensity, task complexity, and unpredictability. These dimensions reflect the physical, mental, and emotional demands typical of emergency medical work. Each was measured through five targeted Likert-scale questions to provide a comprehensive

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understanding of perceived workload. Burnout was measured using the three standard dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment. Emotional exhaustion refers to prolonged fatigue from work stress, while depersonalization reflects emotional detachment from patients or tasks. A diminished sense of accomplishment captures feelings of professional ineffectiveness. Additionally, a fourth category—occupational disengagement—was included to assess withdrawal from work duties. Five items represented each dimension. Psychological resilience was assessed through four components: emotional regulation, cognitive flexibility, sense of coherence, and hardiness. These traits influence how well individuals manage stress, adapt to pressure, and maintain mental well-being. Each component was also measured using five Likert-scale items, allowing for a detailed evaluation of resilience levels.

3.5 Data Analysis Techniques

Data analysis was performed using SPSS and SmartPLS, allowing for both descriptive and inferential statistical evaluations. These tools were selected to ensure analytical precision and to effectively test the study's proposed relationships (Hair et al., 2020). The analysis began with descriptive statistics to summarize participants' demographic details, including age, gender, job position, years of experience, and shift type. Key measures—such as means, standard deviations, frequencies, and percentages—were calculated to identify patterns in the sample (Pallant, 2020). Prior to hypothesis testing, the reliability and validity of the questionnaire were assessed. Cronbach's Alpha was used to measure internal consistency, with values above 0.70 deemed acceptable (Nunnally & Bernstein,

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1994). To evaluate construct validity, Composite Reliability (CR) and Average Variance Extracted (AVE) were calculated, with an AVE of 0.50 or higher indicating adequate convergent validity (Fornell & Larcker, 1981). Discriminant validity was tested using the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio (HTMT) (Sarstedt et al., 2022).

Partial Least Squares Structural Equation Modeling (PLS-SEM) was applied to examine both direct and indirect effects among variables. This method was chosen for its suitability in analyzing complex models with multiple latent constructs and its strength in mediation analysis (Hair et al., 2022). Regression analysis was conducted to assess direct relationships, while mediation analysis evaluated the role of psychological resilience in the link between workload and burnout. The bootstrap method with 5,000 resamples was used to test the significance of indirect effects (Hayes, 2018). Model strength was determined using path coefficients, R^2 values, and effect sizes (f^2).

4. Results

4.1 Descriptive Statistics

4.1.1 Overview of Respondent Characteristics

Table 2 provides an overview of the respondents' demographic characteristics, highlighting key trends in age, gender, job roles, experience levels, and work schedules. The largest age group among participants was those between 30 and 39 years old, making up 34.1% of the total sample, followed by individuals aged 20 to 29, who accounted for 27.3%. This age distribution suggests that the workforce consists primarily of professionals in their careers early and middle stages.

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Regarding gender representation, 58.0% of respondents were male, while 42.0% were female, indicating a relatively balanced gender distribution within the emergency medical field. When considering job roles, nurses formed the largest proportion at 40.3%, followed by paramedics at 25.3% and doctors at 20.5%. Administrative and support staff comprised the remaining 13.9%. This distribution is consistent with the typical composition of emergency healthcare teams, where nurses and paramedics play a central role in direct patient care. Regarding professional experience, 34.1% of participants worked for five to ten years, while 30.7% had less than five years of experience. This suggests a blend of both newer professionals and those with substantial experience. The work schedules of respondents also varied, with 41.0% assigned to day shifts, 27.3% working night shifts, and 31.7% following a rotational shift pattern. The significant proportion of employees working rotational shifts underscores the challenging nature of emergency response jobs, where flexible schedules are essential to maintaining round-the-clock medical services.

Table 2: Demographic Profile of Respondents

Demographic Characteristic	Category	Count (n)	Percentage (%)
Age Group	20-29	80	27.3%
	30-39	100	34.1%
	40-49	70	23.9%
	50 and above	43	14.7%
	Total	**293**	**100%**
Gender	Male	170	58.0%
	Female	123	42.0%
	Total	**293**	**100%**
Job Role	Doctor	60	20.5%

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	Nurse	118	40.3%
	Paramedic	74	25.3%
	Administrative Staff	30	10.2%
	Support Staff	11	3.7%
	Total	**293**	**100%**
Years of Experience	Less than 5 years	90	30.7%
	5-10 years	100	34.1%
	11-15 years	65	22.2%
	More than 15 years	38	13.0%
	Total	**293**	**100%**
Shift Type	Day Shift	120	41.0%
	Night Shift	80	27.3%
	Rotational Shifts	93	31.7%
	Total	**293**	**100%**

4.1.2 Descriptive Analysis of Study Variables

Table 3 presents the summary statistics for the main study variables, highlighting levels of workload, burnout, and psychological resilience among emergency responders at Al-Bashir Hospital. The overall workload was rated moderately high, with task complexity receiving the highest average score (M = 3.90, SD = 0.78), suggesting that managing complex tasks and making rapid decisions posed significant challenges. Job demands followed closely with a mean of 3.80 (SD = 0.80), indicating substantial work-related pressure. Both work pace and intensity (M = 3.65, SD = 0.85) and unpredictability (M = 3.65, SD = 0.82) were also rated moderately, reflecting the dynamic and often unpredictable nature of emergency response work. Regarding burnout, emotional exhaustion had a relatively high mean score (M = 3.60, SD = 0.90), pointing to widespread feelings of fatigue and being overwhelmed. Occupational disengagement was rated similarly (M = 3.60, SD = 0.89), indicating a tendency among some respondents to mentally withdraw

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from their responsibilities. Depersonalization, reflecting emotional detachment, had a slightly lower average (M = 3.40, SD = 0.85), while reduced personal accomplishment had the lowest burnout score (M = 3.20, SD = 0.88), suggesting that despite elevated stress, many responders still perceived themselves as effective in their roles. Psychological resilience was rated moderately high across all components. Emotional regulation had the highest score (M = 3.85, SD = 0.79), indicating that most participants were able to manage their emotions effectively under pressure. The sense of coherence (M = 3.80, SD = 0.80), cognitive flexibility (M = 3.75, SD = 0.83), and hardiness (M = 3.75, SD = 0.82) further reflected the responders' ability to adapt to challenging work conditions, find meaning in their roles, and maintain emotional stability.

An assessment of skewness and kurtosis values confirmed that the data met the assumptions of normality, with skewness ranging from -0.18 to 0.19 and kurtosis values between -0.26 and 0.46. These results support the use of parametric tests in subsequent analyses and ensure the reliability of hypothesis testing.

Table 3: Detailed Descriptive Statistics of Study Variables

Variable	Sub-variable	Mean	Standard Deviation	Skewness	Kurtosis
Workload	Job demands	3.80	0.80	-0.18	0.46
	Work pace and intensity	3.65	0.85	-0.04	-0.13
	Task complexity	3.90	0.78	0.12	-0.15
	Work unpredictability	3.65	0.82	0.03	0.03
Burnout	Emotional exhaustion	3.60	0.90	0.19	-0.26

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	Depersonalization	3.40	0.85	-0.12	-0.30
	Reduced personal accomplishment	3.20	0.88	-0.22	-0.34
	Occupational disengagement	3.60	0.89	-0.09	-0.18
Psychological Resilience	Emotional regulation	3.85	0.79	-0.15	0.28
	Cognitive flexibility	3.75	0.83	-0.10	0.17
	Sense of coherence	3.80	0.80	-0.11	-0.12
	Hardiness	3.75	0.82	-0.14	-0.09

4.1.3 Correlation Analysis

Table 4 presents the correlation analysis, illustrating the relationships between workload, burnout, and psychological resilience among emergency responders. The results indicate a moderate positive correlation between workload and burnout ($r = 0.58$, $p < 0.01$), suggesting that burnout symptoms become more prevalent as perceived workload increases. This finding is consistent with prior research, which has identified excessive job demands as a key factor contributing to emotional exhaustion and occupational disengagement. In contrast, workload and psychological resilience were negatively correlated ($r = -0.42$, $p < 0.01$), indicating that higher workload levels were associated with lower resilience. This suggests that as work demands intensify, responders may find it more challenging to cope with stress, emphasizing the potential role of resilience in alleviating workplace pressures. Similarly, burnout and psychological resilience showed a strong negative correlation ($r = -0.55$, $p < 0.01$), meaning that individuals with higher resilience reported lower burnout levels. This aligns with existing studies, which suggest that

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resilience helps professionals manage occupational stress more effectively, reducing the likelihood of burnout.

Table 4: Correlation Matrix of Study Variables

Variable	Workload	Burnout	Psychological Resilience
Workload	1.00	0.58**	-0.42**
Burnout	0.58**	1.00	-0.55**
Psychological Resilience	-0.42**	-0.55**	1.00

Note: **$p < 0.01$ (two-tailed).**

4.2 Reliability and Validity Assessment

Ensuring that the measurement tools used in a study are reliable and valid is essential for maintaining the credibility and accuracy of research findings. Reliability refers to the consistency of a measurement tool, meaning that if the same test is conducted multiple times under similar conditions, it should yield comparable results. Conversely, validity determines whether the instrument accurately measures the theoretical concept it was designed to assess. In this study, reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR), both of which measure the internal consistency of the scales. Meanwhile, construct validity was examined through convergent and discriminant validity tests. These assessments confirm that the workload, burnout, and psychological resilience measurement tools are both statistically sound and theoretically appropriate.

4.2.1 Internal Consistency Reliability

The study utilized Cronbach's Alpha (α) and Composite Reliability (CR) to assess internal consistency reliability. Cronbach's Alpha is a widely recognized metric for measuring how well the items within a scale are related to each other. A value

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above 0.70 is generally considered acceptable, while a value exceeding 0.80 indicates strong reliability (Nunnally & Bernstein, 1994). Composite Reliability (CR) provides an additional measure by considering the proportion of true variance in a construct compared to measurement error, with values above 0.70 suggesting a high level of reliability (Hair et al., 2020). The reliability analysis demonstrated that all measurement scales in this study exhibited strong internal consistency. As presented in Table 5, the Cronbach's Alpha values for workload (0.82), burnout (0.88), and psychological resilience (0.85) confirmed that each scale met the reliability criteria. Similarly, the Composite Reliability (CR) values ranged between 0.85 and 0.90, reinforcing the robustness of these scales. Among the variables, burnout had the highest Cronbach's Alpha value (0.88), suggesting that burnout symptoms were measured with the highest consistency. Psychological resilience followed with a Cronbach's Alpha of 0.85, while workload scored 0.82. These results indicate that the measurement instruments used in this study are highly reliable and well-suited for further statistical analyses.

Table 5: Reliability Analysis of Study Variables (Cronbach's Alpha & Composite Reliability)

Variable	Cronbach's Alpha (α)	Composite Reliability (CR)
Workload	0.82	0.85
Burnout	0.88	0.90
Psychological Resilience	0.85	0.87

4.2.2 Construct Validity

As shown in Table 6, all factor loadings exceeded the 0.70 threshold, confirming a strong correlation between each item and its respective construct. The AVE values ranged from 0.62 to 0.68, surpassing the recommended minimum of 0.50, further

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validating the measurement model's strength. Among the constructs, burnout had the highest AVE value (0.68), demonstrating that it effectively explained a substantial portion of the variance in the observed items. Workload (0.62) and psychological resilience (0.65) also met the criteria for strong convergent validity. These findings indicate that the items within each construct are highly interrelated and effectively capture the theoretical concepts they were designed to measure.

Table 6: Convergent Validity – Factor Loadings and AVE Values

Variable	Factor Loadings (Range)	Average Variance Extracted (AVE)
Workload	0.72 - 0.85	0.62
Burnout	0.75 - 0.89	0.68
Psychological Resilience	0.73 - 0.86	0.65

4.2.3 Discriminant Validity

As presented in Table 7, the Fornell-Larcker Criterion values ranged from 0.79 to 0.82, confirming that each construct captured more variance within itself than it shared with other constructs. Similarly, the HTMT ratios remained below the recommended threshold of 0.85, with the highest correlation between burnout and resilience at 0.65. These findings reinforce the strong discriminant validity of the constructs, indicating that workload, burnout, and psychological resilience are not only conceptually but also statistically distinct. This distinction enhances the credibility of subsequent analyses by ensuring that each construct is measured independently and accurately.

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Table 7: Discriminant Validity – Fornell-Larcker Criterion & HTMT Ratios

Variable	Fornell-Larcker Criterion	HTMT Ratio
Workload	0.79	0.58
Burnout	0.82	0.65
Psychological Resilience	0.80	0.60

The reliability and validity analyses demonstrated that this study's measurement tools were statistically reliable and theoretically well-founded. The high Cronbach's Alpha and Composite Reliability values confirmed strong internal consistency, ensuring that the items within each construct were closely related. The AVE values and factor loadings also established solid convergent validity, indicating that the measurement scales effectively captured the intended theoretical concepts. Moreover, the discriminant validity tests verified that workload, burnout, and psychological resilience were distinct constructs, further strengthening the credibility of the study's measurement framework. These results provide confidence in the instruments' accuracy, supporting the validity of the study's hypothesis testing and mediation analysis. By confirming that the relationships between workload, burnout, and psychological resilience were measured accurately, these findings ensure that the study's conclusions are meaningful and reliable.

4.3 Hypothesis Testing Results

This section outlines the findings from hypothesis testing, which examined the direct relationships between workload, burnout, and psychological resilience. Regression analysis and structural equation modeling (SEM) were used to determine the strength and significance of these relationships. The standardized

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beta coefficients (β), t-values, and p-values provided statistical insights into the effects of workload on burnout, workload on psychological resilience, and psychological resilience on burnout.

4.3.1 Direct Effects Analysis

The direct effects analysis explored the causal relationships between the key study variables. Specifically, it was hypothesized that workload would have a direct positive impact on burnout (H1), a negative impact on psychological resilience (H2), and that psychological resilience would negatively affect burnout (H3). The results from regression and SEM confirmed these expected relationships. As presented in Table 9, workload was found to have a significant positive association with burnout ($\beta = 0.58$, $t = 7.45$, $p < 0.001$), suggesting that higher workload levels contribute to increased burnout symptoms among emergency responders. This finding is consistent with previous research, which indicates that excessive job demands, high work intensity, and unpredictable work conditions contribute to emotional exhaustion and professional disengagement. Additionally, workload significantly negatively impacted psychological resilience ($\beta = -0.42$, $t = -5.90$, $p < 0.001$), indicating that resilience levels decreased as the workload increased. This suggests that prolonged exposure to demanding work conditions may weaken an individual's ability to manage stress effectively, making them more susceptible to burnout and mental health challenges. Finally, psychological resilience demonstrated a strong negative effect on burnout ($\beta = -0.55$, $t = -6.85$, $p < 0.001$), showing that higher resilience levels were significantly associated with lower burnout rates. This supports the idea that resilience is a protective factor, helping

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individuals cope with occupational stress and reducing burnout symptoms among emergency responders.

Table 9: Results of Direct Effect Hypothesis Testing (Regression Path Coefficients, t-values, and p-values)

Hypothesis	Path Coefficient (β)	t-value	p-value
H1: Workload → Burnout	0.58	7.45	< 0.001
H2: Workload → Psychological Resilience	-0.42	-5.90	< 0.001
H3: Psychological Resilience → Burnout	-0.55	-6.85	< 0.001

4.3.2 Mediation Analysis (Testing Psychological Resilience as a Mediator)

This section explores whether psychological resilience acts as a mediator in the relationship between workload and burnout. Mediation analysis was conducted using bootstrapping with 5,000 resamples, a widely recommended approach for testing indirect effects, as it provides reliable confidence intervals without assuming a normal distribution (Preacher & Hayes, 2008). The significance of the indirect effect was assessed using bias-corrected confidence intervals and the Sobel test, which determines whether the mediation pathway is statistically meaningful. Mediation occurs when the effect of an independent variable (workload) on a dependent variable (burnout) is either partially or fully explained by a third variable (psychological resilience). This analysis aims to determine whether workload indirectly affects burnout by reducing resilience, which may be a protective factor in managing workplace stress.

As presented in Table 10, the indirect effect of workload on burnout through psychological resilience was statistically significant ($\beta = -0.23$, $p < 0.001$). The bootstrapped 95% confidence interval (-0.31 to -0.15) did not include zero,

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confirming the significance of the indirect effect. The Sobel test statistic (-4.85, $p < 0.001$) further supported a mediation effect. These findings suggest that psychological resilience plays a crucial role in reducing the negative impact of workload on burnout, reinforcing its importance as a protective factor.

The results indicate that workload contributes to burnout through a direct relationship and indirectly by lowering resilience levels. This underscores the need for interventions to enhance resilience among emergency responders, as strengthening this psychological trait may help mitigate the adverse effects of excessive workload and reduce burnout symptoms in high-stress environments.

Table 10: Mediation Analysis Using Bootstrapping (Indirect Effects, Confidence Intervals, and Significance Levels)

Path	Indirect Effect (β)	Bootstrapped 95% CI (Lower - Upper)	Sobel Test Statistic	p-value
Workload → Psychological Resilience → Burnout	-0.23	-0.31 to -0.15	-4.85	< 0.001

These findings confirm that psychological resilience plays a key role in mediating the relationship between workload and burnout, helping to reduce the extent to which high workload levels contribute to burnout symptoms. This highlights the importance of workplace policies and training programs designed to strengthen resilience to counteract the negative impact of occupational stress.

The mediation analysis results provide strong empirical support for the hypothesis that psychological resilience is crucial in explaining how workload affects burnout. While workload continues to have a direct positive effect on burnout, the presence of resilience significantly weakens this connection. These findings align with

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stress-buffering theories, which suggest that interventions focused on building resilience can help emergency responders better manage high workload demands. By fostering resilience, organizations can reduce burnout rates and improve overall well-being among employees working in high-pressure environments.

4.3.3 Model Fit Evaluation and Predictive Power

As shown in Table 11, the model demonstrated strong predictive strength for burnout, with an R^2 of 0.51. This indicates that 51% of the variation in burnout was explained by workload and resilience, confirming their significant role in shaping burnout among emergency responders. In comparison, psychological resilience had an R^2 of 0.18, suggesting that workload explained 18% of the variance, while other factors—such as personal coping mechanisms, social support, or organizational strategies—may also influence resilience. The effect size for burnout was $f^2 = 0.92$, signifying a large impact of workload and resilience on burnout. For psychological resilience, $f^2 = 0.22$, indicating a moderate effect, meaning workload influences resilience but is not its sole determinant.

These results highlight the critical need to manage workload and enhance resilience through targeted interventions, helping to reduce burnout risks and support the well-being of emergency responders.

Table 11: R^2 Values and Effect Sizes (f^2) for Study Variables

Variable	R^2 (Variance Explained)	Effect Size (f^2)
Burnout	0.51	0.92
Psychological Resilience	0.18	0.22

These findings confirm that the model effectively explains a substantial portion of the variance in burnout and a moderate level of resilience, supporting the study's

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conceptual framework. The strong effect size for burnout highlights the significant impact of workload and resilience in determining burnout levels, emphasizing their critical role in occupational stress management. Meanwhile, the moderate effect size for resilience suggests that other psychosocial factors, such as coping mechanisms, social support, and organizational interventions, may also contribute to resilience development. The model fit evaluation further validates that workload and resilience play a significant role in explaining burnout, reinforcing the importance of addressing these factors in workplace policies. These results make a strong case for implementing targeted strategies to enhance resilience and manage workload-related stress, ultimately reducing burnout risks. Organizations can help emergency responders maintain better mental health and improve job performance by prioritizing interventions that strengthen resilience, ensuring a more sustainable and effective workforce in high-pressure environments.

5. Discussion

This study offers clear evidence of how workload, burnout, and psychological resilience are interrelated among emergency responders at Al-Bashir Hospital. The findings confirm that high workloads—characterized by demanding tasks, fast-paced environments, and unpredictable responsibilities—significantly increase emotional exhaustion and detachment from work. These results align with previous studies that identify excessive workload as a primary contributor to burnout in high-stress occupations (Bevan et al., 2022; Samsudin et al., 2021).

The study also found that increased workload negatively affects psychological resilience. In other words, greater job-related stress reduces responders' ability to

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cope effectively, consistent with earlier findings showing that long-term exposure to pressure erodes resilience and increases vulnerability to burnout (Hu et al., 2024; O'Neil & Kruger, 2022). However, the results also demonstrate that psychological resilience plays a protective role. Participants with higher resilience reported lower levels of emotional exhaustion and were better able to navigate stressful work situations. This supports existing research highlighting resilience as a buffer that reduces the risk of burnout in demanding professions (Hesketh & Tehrani, 2024; Rossouw et al., 2024).

Further analysis revealed that resilience partially mediates the relationship between workload and burnout. While workload has a direct impact on burnout, some of this effect is driven by its influence on resilience. This underscores the importance of resilience as a psychological resource that can reduce the impact of work-related stress. These findings are in line with established theoretical frameworks such as the Transactional Model of Stress and the Conservation of Resources (COR) theory, both of which emphasize the role of coping mechanisms in managing occupational stress (Maslach & Leiter, 2016; Hobfoll, 1989). The results reinforce the idea that strengthening resilience is key to mitigating burnout.

The study's findings echo patterns observed in prior research across various emergency professions. Previous studies have shown that excessive workload contributes to burnout in emergency healthcare workers, firefighters, and paramedics (Bevan et al., 2022; Marvin et al., 2023; Marciniak, 2023). Similarly, resilience has been consistently identified as a protective factor, with those receiving resilience training showing reduced stress and burnout symptoms

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(Rossouw et al., 2024; Hesketh & Tehrani, 2024). The results are also supported by Alshahrani et al. (2022) and Mao et al. (2022), who found that resilience enhances emotional regulation and well-being. Mediation analysis aligns with findings by Connor & Davidson (2003) and Preacher & Hayes (2008), confirming that resilience shapes how individuals respond to high-pressure situations.

While these findings align with global literature, this study adds a unique perspective by focusing on emergency responders at Al-Bashir Hospital, offering insight into burnout and resilience within a Middle Eastern healthcare context. It provides a localized understanding that incorporates specific cultural and organizational dynamics, which are often overlooked in Western-centric research. The findings also enhance existing occupational stress models, particularly the Job Demand-Control-Support Model (Van der Doef & Maes, 1999), by illustrating how individual coping strategies like resilience can mitigate the effects of high job demands. Similarly, the results support the COR theory's claim that psychological resources are depleted under sustained stress, and reinforce Maslach's Burnout Theory by showing that resilience influences how workload translates into burnout (Maslach & Leiter, 2016).

These insights have several practical implications for emergency services, hospital leadership, and policymakers. As workload is a key driver of burnout, organizations must adopt strategies to manage job demands, ensure adequate staffing, and introduce balanced shift schedules (Davidson et al., 2021). Reducing prolonged exposure to intense tasks and allowing for regular rest can help lower stress levels. Equally important is the development of resilience-focused training programs.

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Integrating resilience-building activities into professional development—such as cognitive-behavioral training, mindfulness, and stress management workshops—can help responders better manage emotional strain (Rossouw et al., 2024; Hesketh & Tehrani, 2024).

Workplace culture also plays a vital role. Encouraging peer support, access to counseling, and structured debriefing after stressful events can foster a more resilient workforce (Tjin et al., 2022). Creating an environment where seeking help is normalized can strengthen emotional well-being and reduce the stigma around mental health.

From a policy standpoint, resilience and mental health programs should be embedded into emergency response training and occupational health systems. Policymakers should consider mandating resilience education as part of emergency medical curricula to equip staff with the tools needed to cope with job stress. Leadership should be trained to recognize early signs of burnout and intervene proactively (Bevan et al., 2022). A comprehensive, multi-level strategy—combining organizational support, personal development, and social networks—is essential for enhancing the long-term well-being of emergency responders. Future efforts should focus on customized resilience programs that address the specific pressures faced in high-demand hospital environments.

6. Conclusion

This study explored the connections between workload, burnout, and psychological resilience among Al-Bashir Hospital emergency responders, emphasizing heavy job demands' significant effects on overall well-being. The findings confirmed that an

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excessive workload is a key factor in burnout, as increased job demands, high-intensity tasks, and unpredictable work conditions contribute to emotional exhaustion and disengagement. However, the study also highlighted the crucial role of psychological resilience in protecting against these negative effects, showing that higher resilience levels help mitigate burnout symptoms and improve stress management.

The mediation analysis provided strong evidence that resilience partially mediates the relationship between workload and burnout. While a high workload directly contributes to burnout, its impact is significantly influenced by an individual's ability to cope with stress. This underscores the importance of resilience-building strategies in high-pressure work environments, especially for emergency responders who regularly face critical incidents and demanding job conditions. Strengthening resilience can help individuals manage stress more effectively and reduce the long-term risks of burnout.

From a practical standpoint, the study highlights the need for effective workload management strategies, structured resilience training, and organizational support systems to reduce burnout risks. Implementing policies that optimize shift schedules, allocate resources more efficiently, and promote psychological well-being can significantly improve responders' ability to handle job-related stress. Fostering a work environment that prioritizes mental health and resilience can lead to higher job satisfaction, lower staff turnover, and more effective emergency response operations.

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This research adds valuable insights to the broader discussion on occupational stress, burnout, and resilience by shedding light on emergency responders' challenges. The findings reinforce the need to integrate psychological resilience into workforce training and organizational policies to better prepare responders for the mental demands of their work. Future studies should examine the long-term effects of resilience-building programs, identify additional factors contributing to burnout, and assess the effectiveness of various strategies in emergency response settings.

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