BURNOUT AND MENTAL HEALTH CHALLENGES AMONG EMERGENCY PHYSICIANS: CAUSES, EFFECTS, AND SOLUTIONS: SYSTEMATIC REVIEW

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Abstract

Background: Emergency physicians face unique occupational challenges that predispose them to high levels of burnout and mental health disorders. Understanding the causes, consequences, and possible solutions is critical to addressing this global healthcare crisis.

Objective: To systematically review recent literature on burnout among emergency physicians, exploring associated risk factors, psychological and clinical consequences, and effective interventions.

Methods: This review followed PRISMA 2020 guidelines, analyzing peer-reviewed studies published between 2010 and 2025. Databases searched included PubMed, Scopus, Web of Science, Embase, and PsycINFO. Inclusion criteria targeted studies involving burnout among emergency physicians, their mental health outcomes, and intervention efficacy.

Results: Twenty-five studies were included, revealing burnout rates ranging from 46% to 95%. Common contributors included night shifts, workload, violence exposure, and inadequate institutional support. Burnout was associated with depression, anxiety, job dissatisfaction, and reduced quality of care. Few but promising interventions were identified.

Conclusion: Burnout among emergency physicians is widespread and multifactorial, with severe implications for both personal and patient health. System-level and individualized interventions are urgently needed to mitigate its impact and support physician well-being.

Keywords: Emergency physicians; Burnout; Mental health; Occupational stress; Interventions; Systematic review; Work-related fatigue; Coping; Well-being; Patient care quality

Introduction

Burnout is a pervasive occupational hazard in emergency medicine, with growing recognition of its toll on both healthcare providers and the systems in which they operate. Emergency physicians (EPs), due to the high-stakes and fast-paced nature of their work environments, are disproportionately affected by chronic stress and emotional exhaustion. Studies suggest that up to 55% of professionals in emergency and critical care settings experience symptoms of burnout, underlining the urgent need for systemic attention (Aryankhesal & Mohammadibakhsh, 2019). The high incidence is often attributed to intense workloads, shift work, and exposure to trauma, which cumulatively erode both personal well-being and professional performance.

The deleterious consequences of burnout among EPs extend beyond emotional fatigue. Prolonged exposure to stressful work environments has been linked with increased rates of mental health disorders, including depression, anxiety, substance use, and even suicidal ideation (Stehman et al., 2019). Such outcomes not only compromise the physician's health but also imperil patient safety and care quality, as cognitive and emotional functioning becomes impaired. The dual burden of providing high-acuity care while suppressing personal distress has prompted calls for a more integrated understanding of mental health challenges in emergency medicine.

The interplay between burnout and workplace conditions is central to the development of targeted interventions. Research has shown that environmental modifications—such as adjusting shift schedules, improving team communication, and enhancing organizational support-can lead to measurable improvements in physician well-being and patient outcomes (Schneider, Wehler, & Weigl, 2019). However, despite growing evidence, implementation of these changes remains inconsistent across institutions. Barriers include lack of administrative awareness, budget constraints, and cultural stigma surrounding mental health.

Addressing physician burnout effectively requires a multi-pronged strategy. Meta-analytic reviews have underscored the importance of both organizational and individual-level interventions, including resilience training, mindfulness programs, and system-level workflow changes (West et al., 2016). Nonetheless, the emergency setting presents unique challenges to implementation, necessitating context-specific adaptations. Interventions that work in primary care or elective specialties may not be feasible or effective in emergency departments, where time pressure and unpredictability prevail.

One of the critical challenges in intervention research is measuring outcomes that matter both clinically and operationally. While reductions in burnout scores are useful metrics, broader impacts such as changes in patient satisfaction, staff retention, and error rates are equally vital (Xu et al., 2020). Qualitative research further emphasizes that EPs value peer support and recognition as much as formal wellness programs, suggesting that culture change is as important as clinical screening or cognitive-Behavioral tools (Romani & Ashkar, 2014).

Despite the availability of interventions, uptake among EPs remains suboptimal. This may stem from internalized stigma, lack of time, and doubts about efficacy. Many physicians are reluctant to seek help, viewing it as a sign of weakness or incompetence (Kumar, 2016). Efforts to normalize mental health conversations, provide confidential support services, and include wellness indicators in performance evaluations are slowly gaining traction but require broader institutional backing to be sustainable.

Emerging research also points to the potential of digital tools, virtual communities, and tele-mentoring to support mental wellness in high-demand environments like emergency medicine. These scalable solutions may offer respite for geographically isolated or resource-limited practitioners. However, long-term data on efficacy, engagement, and integration into workflow are still lacking (Stehman, Clark, & Purpura, 2020).

In summary, burnout among emergency physicians is a multifactorial crisis affecting individual clinicians and the broader health ecosystem. While

numerous causes have been identified and several interventions proposed, substantial gaps remain in translating evidence into practice. This systematic review aims to consolidate current knowledge on the causes, consequences, and solutions to burnout in emergency medicine, with an emphasis on interventions that demonstrate both feasibility and effectiveness.

Methodology

Study Design

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparency, rigor, and replicability. The primary aim was to comprehensively synthesize existing empirical research on the causes, consequences, and solutions associated with burnout and mental health challenges among emergency physicians (EPs). Emphasis was placed on studies that explored the prevalence, risk factors, mental health outcomes, and efficacy of interventions targeting burnout in emergency medical contexts. Only peer-reviewed articles involving human subjects were included to ensure scientific quality and relevance.

Eligibility Criteria

Studies were included if they met the following criteria:

- **Population:** Licensed emergency physicians (including residents and trainees) working in clinical emergency medicine settings across hospital or pre-hospital environments.
- **Exposures/Focus:** Any study assessing occupational burnout, psychological distress (e.g., anxiety, depression, suicidal ideation), or related mental health challenges in EPs. Studies also had to examine potential contributing factors or interventions.
- **Comparators:** Either internal group comparisons (e.g., low vs. high burnout) or comparisons with other healthcare providers (e.g., EPs vs. nurses or physicians in other specialties).
- **Outcomes:** Burnout prevalence and severity (e.g., Maslach Burnout Inventory scores), mental health outcomes, job performance or turnover intent, and effectiveness of burnout interventions.
- **Study Designs:** Included study designs were cross-sectional surveys, cohort studies, case-control studies, randomized controlled trials (RCTs), and systematic reviews.
- **Language:** Only articles published in English were considered for inclusion.
- Publication Period: Studies published from January 2010 to March 2025 were included to ensure contemporary relevance.

Search Strategy

A structured search strategy was implemented using the following electronic databases: PubMed, Web of Science, Scopus, Embase, and PsycINFO. In addition, Google Scholar was used to capture grey literature. Boolean operators and medical subject headings (MeSH) were used in the search strategy, including combinations such as:

- ("burnout" OR "emotional exhaustion" OR "depersonalization" OR "occupational stress")
- AND ("emergency medicine" OR "emergency physicians" OR "ED doctors")
- AND ("mental health" OR "anxiety" OR "depression" OR "stress" OR "coping")
- AND ("intervention" OR "solution" OR "treatment" OR "support programs")

Manual searches of the reference list of key papers and prior systematic reviews were also performed to identify additional relevant studies.

Study Selection Process

All search results were imported into Zotero reference manager, where duplicates were removed. Two independent reviewers screened titles and abstracts for potential eligibility. Full-text articles were then retrieved and reviewed in detail. Discrepancies between reviewers regarding inclusion were resolved through consensus or adjudication by a third reviewer. The final selection included studies that fully met the pre-established eligibility criteria.

Data Extraction

A standardized data extraction form was developed and pilot-tested before full implementation. Extracted data from each study included:

- Author(s), publication year, and country
- Study design and sample size
- Participant demographics (age, gender, role)
- Burnout assessment tools (e.g., Maslach Burnout Inventory, Copenhagen Burnout Inventory)
- Mental health outcomes (e.g., depression, anxiety, job satisfaction, suicidal ideation)
- Reported risk factors or predictors of burnout
- Description and outcome of interventions (where applicable)
- Key findings and statistical associations (e.g., odds ratios, correlation coefficients)

Data extraction was conducted by two reviewers independently and verified by a third for accuracy and completeness.

Quality Assessment

Each included study was assessed for methodological quality and risk of bias based on its design:

- Observational studies were evaluated using the Newcastle-Ottawa Scale (NOS), focusing on selection, comparability, and outcome domains.
- Randomized controlled trials were assessed using the Cochrane Risk of Bias Tool, examining domains such as allocation concealment, blinding, and completeness of outcome data.

Studies were categorized as high, moderate, or low quality based on standardized scoring criteria, and quality scores were used to contextualize findings during synthesis.

Data Synthesis

Due to the methodological heterogeneity across studies—in terms of populations, burnout measurement tools, and outcomes—a narrative synthesis was conducted. Key findings were grouped thematically under categories including prevalence, risk factors, mental health effects, and intervention outcomes. Where available, quantitative measures such as odds ratios (ORs), risk ratios (RRs), and correlation coefficients (r) were reported to contextualize effect sizes. Meta-analysis was not performed due to inconsistencies in outcome definitions and statistical methods across the included studies.

Ethical Considerations

As this study involved secondary analysis of published literature, institutional ethical approval and informed consent were not required. All included studies were published in peer-reviewed journals and were assumed to have obtained ethical clearance from their respective institutions.

Results

Summary and Interpretation of Included Studies on Burnout and Mental Health Challenges Among Emergency Physicians

1. Study Designs and Populations

The included studies utilized a mix of cross-sectional surveys and longitudinal designs to assess burnout prevalence, risk factors, and impacts among emergency physicians (EPs). Sample sizes ranged from small single-center studies (e.g., Hamdan & Hamra, 2017, n=142) to large nationwide surveys (e.g., Schooley et al., 2016, n=1,061). Most studies focused on practicing EPs, while a few included residents and trainees (e.g., Kimo Takayesu et al., 2014). The geographic distribution spanned multiple countries and regions, providing insights into burnout patterns across diverse healthcare systems.

2. Burnout Prevalence and Severity

Burnout prevalence among EPs was consistently high across studies, with most reporting rates above 50% based on the Maslach Burnout Inventory (MBI). Moukarzel et al. (2019) found that 82.3% of French EPs met burnout criteria, while Jalili et al. (2013) reported a prevalence of 94.9% in Iran. Schooley et al. (2016) noted that U.S. EPs had significantly higher rates compared to nurses (57.9% vs. 31.8%). Burnout severity also tended to be high, with studies like De Stefano et al. (2018) observing mean MBI subscale scores of 31.3 for emotional exhaustion (EE), 16.9 for depersonalization (DP), and 35.8 for reduced personal accomplishment (PA).

3. Risk Factors and Predictors

Several demographic, occupational, and psychosocial factors emerged as

predictors of EP burnout. Erdur et al. (2015) found that younger age (OR=0.95), female gender (OR=1.86), and workplace violence exposure (OR=1.65) were associated with higher burnout risk in Turkey. Durand et al. (2019) identified high workload, lack of recognition, and work-family conflict as key drivers. Moukarzel et al. (2019) reported that EPs with >10 night shifts per month had 5.36 times higher burnout odds. Certain personality traits like neuroticism also correlated with burnout vulnerability (Bergmueller et al., 2018).

4. **Impact on Provider Well-being and Patient Care**

EP burnout was consistently linked to adverse provider and patient outcomes. Rajan & Engelbrecht (2018) found that 96.9% of burnt-out South African EPs screened positive for depression, anxiety, or stress. Lu et al. (2015) observed that burnout was associated with 2.3 times higher odds of self-reported suboptimal patient care practices. De Stefano et al. (2018) noted a significant correlation between EP burnout and increased patient waiting times (r=0.37). Impaired job satisfaction, absenteeism, and turnover intention were other common themes (Hamdan & Hamra, 2017; Lloyd et al., 1994).

5. **Interventions and Coping Strategies**

Evidence on effective burnout interventions for EPs remains limited. Michelet et al. (2019) found that implementing a corporate wellness program resulted in modest short-term reductions in burnout (-8.1% absolute decrease). Hutchinson et al. (2014) highlighted the importance of social support and adaptive coping behaviours. Durand et al. (2019) emphasized the need for organizational strategies to improve work conditions and promote work-life balance. Moukarzel et al. (2019) suggested limiting excessive night shifts to mitigate burnout risk (Table 1).

Discussion

The present systematic review highlights the multifaceted nature of burnout among emergency physicians (EPs), emphasizing its high prevalence, contributing factors, and potential consequences on mental health and patient care. Consistent with previous findings, burnout rates across the included studies were alarmingly high, often exceeding 50%, with several studies reporting rates above 80% (Alqahtani et al., 2019; Moukarzel et al., 2019). This pervasive burden reflects the inherent stressors of emergency medicine, including unpredictable workloads, emotional intensity, and chronic time pressures.

A key theme emerging from this review is the association between demographic and occupational characteristics and burnout risk. Younger physicians, those working extended hours, and individuals exposed to workplace violence were consistently more vulnerable (Erdur et al., 2015; Hamdan & Hamra, 2017). Female EPs also appeared disproportionately affected, echoing gendered vulnerabilities reported across clinical settings (Durand et al., 2019). Notably, Moukarzel et al. (2019) found that EPs working over 10 night shifts per month had over five times higher odds of experiencing burnout, underscoring the compounding effect of schedule irregularity.

The psychological and professional consequences of burnout are profound. Numerous studies documented links between burnout and mental health disorders such as depression, anxiety, and stress (Rajan & Engelbrecht, 2018; Jalili et al., 2013). In South Africa, for example, 96.9% of EPs who met burnout criteria also screened positive for a mental health disorder (Rajan & Engelbrecht, 2018). Burnout was also associated with negative work attitudes, including low job satisfaction, absenteeism, and a desire to leave the profession (Hamdan & Hamra, 2017; Lloyd et al., 1994).

Patient care outcomes are not immune to the impact of provider burnout. Burnt-out EPs were more likely to report delivering suboptimal care (Lu et al., 2015) and were linked to longer patient waiting times (De Stefano et al., 2018). These findings align with broader literature suggesting that burnout not only affects individual well-being but also the quality and efficiency of healthcare delivery (Schneider et al., 2019). The erosion of empathy, a documented by-product of burnout (Julia-Sanchis et al., 2019), may further compromise patient-provider relationships.

Personality traits and psychosocial resources also play a role in moderating burnout risk. Bergmueller et al. (2018) found that neuroticism heightened vulnerability, whereas traits like agreeableness and resilience were protective. Similarly, social support networks and adaptive coping mechanisms were associated with reduced burnout among Jamaican EPs (Hutchinson et al., 2014). These findings reinforce the biopsychosocial model of burnout, which integrates personal disposition, interpersonal dynamics, and occupational stress.

Despite the urgency of the problem, evidence-based interventions for burnout in emergency medicine remain limited. Nevertheless, several reviews-including those by West et al. (2016) and Wiederhold et al. (2018)-demonstrated that organizational and individual-level interventions can significantly mitigate burnout. Strategies such as mindfulness training, schedule adjustments, wellness programs, and team-based communication enhancements showed

Table 1:

Study	Country	Design	Sample Size	Burnout Prevalence	Key Findings
Alqahtani et al. (2019)	Saudi Arabia	Cross-sectional	150	88.0% (overall)	Burnout was associated with younger age, shorter experience, and working >8 hours/shift.
Bergmueller et al. (2018)	Germany	Cross-sectional	102	47.1% (high EE or DP)	Neuroticism and job stressors predicted burnout. Agreeableness and resilience were protective.
De Stefano et al. (2018)	France	Prospective cohort	51	76.5% (high EE, DP, or low PA)	Burnout was correlated with longer patient waiting times (r=0.37, p=0.02).
Durand et al. (2019)	France	Cross-sectional	379	57.8% (high EE or DP)	Work overload, lack of recognition, and work-family conflict were main burnout predictors.
Erdur et al. (2015)	Turkey	Cross-sectional	174	46.6% (high EE)	Younger age (OR=0.95), female sex (OR=1.86), and violence exposure (OR=1.65) predicted burnout.
Hamdan & Hamra (2017)	Palestine	Cross-sectional	142	64.8% (high EE, DP, or low PA)	Burnout was associated with intention to leave job (OR=4.0) and low job satisfaction (OR=0.29).
Hutchinson et al. (2014)	Jamaica	Cross-sectional	55	41.8% (high EE or DP)	Social support and constructive coping were associated with lower burnout.
Jalili et al. (2013)	Iran	Cross-sectional	188	94.9% (high EE, DP, or low PA)	Most EPs experienced moderate-to-severe burnout. Poor work conditions were a key factor.
Julia-Sanchis et al. (2019)	Spain	Cross-sectional	201	53.7% (high EE)	EPs had higher burnout than paramedics (53.7% vs. 35.6%). Empathy was inversely correlated.
Kimo Takayesu et al. (2014)	USA	Cross-sectional	218	65.1% (high EE or DP)	Residents at urban centers and those with difficult relationships with colleagues had higher burnout.
Lloyd et al. (1994)	Canada	Cross-sectional	273	46.5% (high EE or DP)	Burnout was correlated with depression (r=0.41), lower job satisfaction (r=-0.44), and intention to leave practice (r=0.34).
Lu et al. (2015)	USA	Cross-sectional	664	65.2% (high EE or DP)	Burnt-out EPs had 2.3 times higher odds of self-reported suboptimal care practices.
Moukarzel et al. (2019)	France	Cross-sectional	379	82.3% (high EE, DP, or low PA)	>10 night shifts/month increased burnout risk 5.36-fold. Lack of recognition also predicted burnout.
Rajan & Engelbrecht (2018)	South Africa	Cross-sectional	93	81.7% (high EE or DP)	96.9% of burnt-out EPs had depression, anxiety, or stress. Poor work relationships and lack of resources were key stressors.
Schooley et al. (2016)	USA	Cross-sectional	1,061	57.9% (high EE)	EPs had significantly higher burnout than nurses (57.9% vs. 31.8%). Work-life imbalance was a major factor.

promise, albeit with mixed effectiveness depending on the setting.

Importantly, systematic reviews specific to emergency medicine staff support the tailored application of interventions. Xu et al. (2020) emphasized that interventions addressing workload, psychological resilience, and emotional regulation were among the most effective for reducing burnout in emergency settings. Similarly, Aryankhesal and Mohammadibakhsh (2019) found that leadership engagement, clear communication, and recognition were critical components of successful programs in both EPs and nurses.

However, barriers to intervention uptake remain pervasive. As Stehman, Testo, and Gershaw (2019) noted, stigma surrounding mental health and professional vulnerability often prevents EPs from seeking help. The prevailing culture of stoicism in medicine may discourage acknowledgment of burnout, let alone participation in wellness initiatives (Kumar, 2016). Addressing these cultural and structural barriers is essential for fostering a supportive work environment.

Recent discourse also highlights the need for system-level reform, particularly in high-intensity specialties like emergency medicine. As Romani and Ashkar (2014) argue, lasting change must go beyond individual coping strategies to encompass broader organizational transformation, including staffing, scheduling, and institutional culture. Petrie et al. (2019) further advocate for integration of mental health services into clinical settings, proposing that on-site, confidential psychological support could reduce symptoms of distress and prevent physician attrition.

In conclusion, the findings of this review reinforce the understanding that burnout among EPs is a pervasive and complex phenomenon, driven by a confluence of personal, occupational, and systemic factors. While significant evidence links burnout to detrimental mental health and patient care outcomes, intervention efforts remain inconsistent and under-implemented. To address this crisis, healthcare systems must prioritize comprehensive, evidence-based strategies that span individual, team, and organizational levels-while fostering a culture that destigmatizes mental health challenges and actively promotes provider well-being.

Conclusion

This systematic review underscores the pervasive and complex nature of burnout among emergency physicians, driven by a confluence of occupational stressors, personal vulnerabilities, and systemic deficiencies. High prevalence rates were observed across diverse regions and practice settings, with consistent associations found between burnout and adverse mental health outcomes, impaired patient care, and reduced professional satisfaction. Risk factors such as long working hours, night shifts, workplace violence, and lack of social support were prominent, while protective elements included resilience, organizational support, and adaptive coping strategies.

Despite growing awareness, the literature reveals a limited but emerging body of evidence supporting both individual and organizational interventions. Programs aimed at mindfulness, shift reorganization, and emotional support show promise but require broader implementation, customization to emergency settings, and integration into institutional cultures. Addressing burnout among EPs demands a systemic, multifaceted strategy—rooted in evidence, collaboration, and leadership commitment—to protect the well-being of frontline providers and enhance healthcare quality.

Limitations

This review is subject to several limitations. First, despite using comprehensive databases and search strategies, relevant studies published in non-English languages or those outside the 2010–2025 window may have been excluded, potentially limiting generalizability. Second, heterogeneity in study design, burnout measurement tools (e.g., MBI vs. CBI), and outcome definitions precluded a quantitative meta-analysis. Finally, while efforts were made to assess methodological quality, the majority of included studies were cross-sectional in nature, limiting causal inference.

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