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BURNOUT SYNDROME AMONG HEALTHCARE PROFESSIONALS: A NARRATIVE REVIEW OF EPIDEMIOLOGY, CLINICAL CONSEQUENCES, AND INTERVENTIONS

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ABSTRACT

Background: Burnout is a syndrome arising from chronic, poorly managed workplace stress and is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. It is highly prevalent among healthcare professionals and has been recognized by the World Health Organization as an occupational phenomenon.

Aim: This narrative review summarizes current evidence on the epidemiology, risk factors, clinical consequences, and management of burnout among healthcare professionals, with particular attention to its impact on patient care and safety.

Methods: We reviewed recent international literature, including epidemiological studies, systematic reviews, and intervention trials addressing burnout in physicians, nurses, and allied health workers.

Results: Burnout affects a substantial proportion of healthcare workers, with reported prevalence exceeding 50% among physicians and approximately one-third among nurses. Frequently reported risk factors include excessive workload, long working hours, insufficient staffing, limited organizational support, and short sleep duration, whereas supportive work environments and individual resilience appear protective. Burnout is consistently associated with increased medical errors, reduced quality of care, lower adherence to safety protocols, and comorbid mental health problems. Organization-directed interventions are generally more effective than individual approaches alone, although combined strategies appear most beneficial.

Conclusions: Burnout is a prevalent occupational phenomenon with important consequences for both clinicians and patients. Effective mitigation requires system-level interventions addressing work organization and leadership, complemented by individual support, together with further research in underrepresented populations and settings.

KEYWORDS

Burnout; Patient Safety; Well-Being

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1. Introduction

Burnout results from chronic workplace stress that has not been successfully managed, and is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Jagannath, 2021). In 2019, the World Health Organization classified burnout in the 11th edition of the International Classification of Diseases (ICD-11) as an occupational phenomenon, rather than a medical condition, characterized by three dimensions: feelings of energy depletion or exhaustion, increased mental distance from one's job, and reduced professional efficacy. (World Health Organization, 2019). Herbert Freudenberger, a psychologist, published one of the first scientific descriptions of burnout in 1974, characterizing it as a state of physical and mental exhaustion; in 1981, Maslach and Jackson introduced the Maslach Burnout Inventory, which remains widely used today (Jagannath, 2021). Burnout is highly prevalent among United States healthcare professionals, with more than half of physicians and approximately one-third of nurses reporting symptoms (Reith, 2018).

2. Epidemiology of Burnout Among Healthcare Professionals

Evidence from multiple settings shows substantial prevalence rates. In a cross-sectional survey at a regional referral hospital, burnout scores ranged from 16% to 86%, with an overall mean score of 57.4%, and most healthcare professionals experienced moderate burnout (Batanda, 2024). More specifically, in a Czech study of 1,064 healthcare workers, 46.24% reported high levels of emotional exhaustion, 25.56% reported high levels of depersonalization, and 24.15% reported low levels of personal accomplishment (Cakirpaloglu et al., 2024). Regional variations exist: a study in central Uganda reported a high prevalence of burnout, affecting 39.8% of healthcare professionals (Kabunga et al., 2024). Emotional exhaustion and depersonalization are

consistently among the most prevalent burnout dimensions in healthcare settings (Han et al., 2025). Approximately 22.4% of healthcare providers in Rwanda exhibited one or more core symptoms of burnout, with a higher likelihood observed among those working in gyneco-obstetric units than in intensive care units (Murinda et al., 2025). Healthcare professionals who slept less than 7 hours on both workdays and days off were 8.33 and 17.18 times more likely to experience burnout, respectively, than those who reported at least 7 hours of sleep (Saintila et al., 2024). High levels of emotional exhaustion (66.6%) and depersonalization (53%) were reported among pharmacists and public health inspectors, with contributing factors including time constraints, workflow disruptions, insufficient information, and lack of recognition (Dimitrova et al., 2025).

3. Risk Factors and Causes

Burnout syndrome among healthcare professionals is a multifactorial phenomenon resulting from the interaction of occupational, organizational, demographic, and individual factors. Occupational determinants consistently associated with burnout include excessive workload, long working hours, time pressure, inadequate staffing, low job control, shift work, and on-call duties (Dall'Ora et al., 2020; Somboonviboon et al., 2023; Amiri et al., 2024). Studies have demonstrated that healthcare workers managing high patient volumes, working extended shifts, and experiencing insufficient recovery time are at significantly greater risk of emotional exhaustion and depersonalization (Shah et al., 2021; Lee et al., 2025). Organizational factors also play a central role in the development of burnout. Poor leadership, lack of organizational support, unfavorable workplace climate, workplace bullying, and exposure to violence have been identified as strong predictors of burnout across healthcare settings (Ruotsalainen et al., 2015; Al'Ararah et al., 2024; Amiri et al., 2024). Moreover, employees who perceive themselves as valued by their organizations report substantially lower levels of burnout, highlighting the protective role of supportive organizational cultures (Prasad et al., 2021).

In recent years, administrative and technological demands have emerged as additional contributors to burnout. The increasing reliance on electronic health records (EHRs) has been associated with documentation burden, cognitive overload, reduced professional autonomy, and poorer work-life balance (Budd, 2023; Kruse et al., 2022; Yang et al., 2026). Research indicates that excessive time spent on documentation and after-hours EHR use significantly increases the likelihood of emotional exhaustion among clinicians (Adler-Milstein et al., 2019; Doherty et al., 2025). At the individual level, younger age, fewer years of professional experience, female gender in many healthcare settings, pre-existing mental health conditions, and maladaptive coping strategies have been associated with increased vulnerability to burnout (Alanazi et al., 2020; Ferry et al., 2020; Norful et al., 2024). Personality characteristics also influence susceptibility, with high neuroticism and low levels of emotional stability, conscientiousness, and extraversion consistently linked to higher burnout levels (Fuentes et al., 2019; Angelini, 2023; Gizdic et al., 2024). Conversely, resilience, emotional intelligence, social support, and problem-focused coping strategies have been identified as important protective factors (Perego et al., 2022; Epifanio et al., 2023; López et al., 2025).

Although the COVID-19 pandemic intensified many existing workplace stressors by increasing workload, emotional demands, and exposure to critically ill patients, recent evidence suggests that burnout primarily reflects long-standing systemic problems within healthcare organizations rather than temporary pandemic-related pressures alone (Morgantini et al., 2020; Denning et al., 2021; Cao et al., 2025). Consequently, burnout should be understood not merely as an individual response to occupational stress but as a manifestation of persistent structural and organizational deficiencies within healthcare systems that require comprehensive, multilevel interventions (Maluleka et al., 2026; Moreira et al., 2026).

4. Clinical Manifestations and Consequences

Burnout syndrome comprises emotional exhaustion, physical fatigue, and cognitive weariness, with persistent burnout associated with increased risk of sleep impairment and several medical disorders including mild cognitive impairment, diabetes, and cardiovascular disease (Khammissa et al., 2022). Doctors experiencing burnout are at higher risk of making poor decisions, displaying hostile attitudes toward patients, committing more medical errors, and having difficult relationships with co-workers; burnout also increases the risk of depression, anxiety, sleep disturbances, fatigue, alcohol and drug misuse, marital dysfunction, premature retirement, and suicide (Kumar, 2016). Among the outcomes of burnout in nursing, research has identified reduced job performance, poorer quality of care, compromised patient safety, adverse events, negative patient experiences, medication errors, infections, patient falls, and intention to leave (Dall'Ora et al., 2020). Workers with non-clinical burnout show executive attention deficits, with higher impulsivity significantly correlated with all burnout dimensions (Schmidt et al., 2024).

5. Impact on Patient Care and Healthcare Systems

5.1 Burnout and Patient Safety Incidents

Research consistently shows that burnout negatively affects patient safety and is a significant risk across different healthcare settings and specialties (Hodkinson et al., 2022). Healthcare professionals experiencing burnout are more likely to engage in unsafe care practices and communication failures, which can lead to safety incidents and reduced efficiency (Madrid et al., 2025). In addition, depersonalization, characterized by cynicism and lower empathy, may result in ignoring safety procedures and patient concerns (Naggar et al., 2025). Burnout has been linked to medication errors, hospital-acquired infections, patient falls, and other adverse events. A meta-analysis found that burnout was associated with poorer perceptions of patient safety, increased rates of infections, falls, medication errors, and adverse outcomes (Quesada-Puga et al., 2024).

5.2 Burnout and Quality of Care Metrics

Burnout not only increases safety risks but also reduces the quality of patient care. Healthcare professionals experiencing burnout report lower quality of care, and studies confirm a negative impact on objective care outcomes (Moreira et al., 2026). Burnout is associated with poorer adherence to clinical guidelines, less effective communication with patients, and reduced use of evidence-based practices (Nagle et al., 2024). Additionally, burnout contributes to lower professionalism, including decreased empathy, less patient-centered communication, and reduced responsiveness to patient needs and concerns (Moreira et al., 2026).

5.3 Burnout and Patient Satisfaction

Patient satisfaction is consistently lower among patients treated by burned-out healthcare professionals (Hodkinson et al., 2022). This is largely due to reduced empathy, weaker communication, and less attention to patient needs and involvement in care decisions (Quesada-Puga et al., 2024). Lower patient satisfaction may further increase burnout by reducing professionals' sense of accomplishment and reinforcing depersonalization (Quesada-Puga et al., 2024). In palliative care and oncology, where compassionate relationships are essential, burnout can weaken patient-centered care and negatively affect treatment adherence (Delafontaine et al., 2024).

5.4 Workforce Turnover and System Sustainability

Burnout is a major factor contributing to healthcare workforce turnover. Healthcare professionals experiencing burnout are more likely to consider leaving their jobs, and these intentions often result in actual departures (Hodkinson et al., 2022). Staff losses increase recruitment and training costs, reduce organizational experience, and place greater workloads on remaining employees, which can further worsen burnout (Moreira et al., 2026). The financial impact of burnout-related turnover is significant. High attrition rates, particularly among early-career professionals, create staffing challenges and increase healthcare system costs associated with recruitment, retention, and reduced quality of care (Grotowska et al., 2025).

5.5 System-Level Impacts and Healthcare Sustainability

Widespread burnout poses a serious threat to healthcare system sustainability. High levels of burnout are associated with lower system performance, poorer quality of care, financial strain, and increased workforce turnover (Moreira et al., 2026). Burnout also contributes to inefficiencies that further increase workload and intensify burnout among healthcare professionals (Nagle et al., 2024). Additionally, healthcare systems with higher burnout rates experience greater hospital and emergency department utilization, reflecting the negative impact of burnout on outpatient care (Bolatov et al., 2025). The problem is particularly severe in resource-limited regions, where burnout affects a large proportion of healthcare workers and support resources are often insufficient (Bolatov et al., 2025). As a result, burnout-related workforce losses can worsen health inequalities and negatively affect population health outcomes (Alhassan et al., 2025).

6. Prevention and Intervention Strategies

Table 1. Individual-level and Organisation-level prevention and intervention strategies

Level	Intervention Type	Specific Strategies	Key Characteristics	Evidence of Effectiveness
Individual level	Mindfulness-Based Interventions	Mindfulness-based stress reduction (MBSR), workplace mindfulness programs, guided meditation, online mindfulness apps	8-week programs or brief digital interventions; often delivered during work time	Large effects on burnout among nurses; reduces stress, anxiety, and psychological distress (Dou et al., 2025; Vonderlin et al., 2020)
Individual level	E-Mental Health Interventions	Web-based stress management, online cognitive behavioral therapy, digital self-help programs, computer-assisted therapy	Self-guided or guided; 24/7 accessibility; lower cost than in-person	Moderate effects on burnout and stress; small effects on depression and anxiety (Phillips et al., 2019)
Individual level	Direct Mental Health Support	One-on-one psychologist check-ins, brief individual counseling, assessment of stressors and well-being goals, referral to mental health services	Opt-out model to reduce participation barriers; 45-minute structured sessions; protected time from clinical duties	Over 90% of residents rated sessions as valuable and convenient; 64.5% participation rate when protected time provided (Stratton et al., 2025)
Individual level	Behavioral Training	Compassion fatigue education, resilience-building exercises, stress coping skills training	Structured training sessions; focus on behavior change techniques	Behavioral training significantly reduced compassion fatigue and improved compassion satisfaction in nurses (Zhang et al., 2025)
Organisational level	Comprehensive/Multifaceted Programs	Combined individual coping + organizational policy; stress patterns and communication workshops; work culture reflection; relaxation and exercise practices; mind-body medicine	9-week in-person and online sessions; organizational endorsement and management support; address both structural and behavioral prevention	Most effective approach; integrated multi-level interventions combining behavioral and structural components show superior outcomes (Schiele et al., 2025)
Organisational level	Psychological Interventions	Secondary trauma alleviation, compassion satisfaction enhancement, grief support processes	Targeted to specific occupational stressors; evidence-based frameworks	Psychological interventions effectively alleviated secondary traumatic stress in healthcare workers (Zhang et al., 2025)
Organisational level	System-Level Support	Organizational culture change, leadership support, psychological safety initiatives, systematic organizational redesign	Address root causes rather than individual symptoms; long-term sustainability focus	Research emphasizes need to view burnout as "a whole organization problem" rather than individual issue (Kiratipaisarl et al., 2024)

MBSR - Mindfulness-based stress reduction

7. Future Directions and Conclusions

Burnout syndrome in healthcare professionals is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, and has been formally recognized by the World Health Organization in the ICD-11 as an occupational phenomenon involving feelings of energy depletion or exhaustion, increased mental distance from one's job, and reduced professional efficacy (World Health Organization, 2019; Yesuf et al., 2025; Moreira et al., 2026). Even before the COVID-19 pandemic, burnout was already highly prevalent, with up to 50% of nurses and 40% of physicians affected; during the pandemic, reported rates rose substantially in many settings, with some studies citing figures as high as 70–90%, contributing to workforce attrition (Moss, 2025). Prevalence varies across settings, with reports of 28.7% in intensive care units; however, estimates for other populations, such as professionals caring for patients with prolonged disorders of consciousness, require further confirmation (Yesuf et al., 2025). Key risk factors include workplace bullying, high job stress, poor communication, inadequate staffing, and low organizational support, whereas protective factors include supportive work environments and individual resilience (Amiri et al., 2024). Reported demographic and work-related risk factors vary across studies and include female sex, working as a nurse, long working hours (more than 8 hours per day or over 40 hours per week), and short sleep duration (under 6 hours per day); findings regarding age and years of experience have been inconsistent, with some studies implicating younger, less experienced staff and others implicating those over 40 years of age with 5–10 years of experience (Yesuf et al., 2025; Battar et al., 2024; Ji et al., 2025).

The trajectory of burnout during the COVID-19 pandemic was not uniform: although some studies reported an overall decline, emotional exhaustion decreased even as depersonalization increased and personal accomplishment fell, indicating a differential evolution of the individual burnout dimensions. Burnout is consistently associated with increased medical errors, adverse events, communication failures, reduced quality of care, and compromised patient safety through cognitive and physiological impairments (Moreira et al., 2026; Tawfik et al., 2019; Bagatini et al., 2026). Higher emotional exhaustion is associated with lower adherence to patient safety protocols and increased adverse patient events, with adherence partially mediating this relationship (Labrague et al., 2025). Burnout frequently co-occurs with depression, anxiety, insomnia, and suicidal ideation, affecting clinicians' emotional responses to patients and clinical decision-making (Bačković et al., 2025; Dumas et al., 2025; Monteiro et al., 2025).

Organization-based interventions addressing staffing, workload, leadership, autonomy, and workflow efficiency are more effective than individual resilience training alone, though combined approaches integrating organizational and individual strategies yield optimal results (Moss, 2025; Olson et al., 2019; Mojtahedi et al., 2025). Mindfulness-based interventions significantly reduce emotional exhaustion, depersonalization, and perceived stress while increasing resilience and work engagement, with effect sizes particularly large for nursing professionals (Klatt et al., 2025; Othman et al., 2023). Ambient artificial intelligence for clinical documentation reduces burnout by alleviating administrative burden, with burnout rates decreasing from 69% to 43% in pilot studies (Misurac et al., 2024). Peer support models and specialized interventions tailored to professional groups—such as structured team briefings and meaning-centered psychotherapy for anesthesiologists—demonstrate high receptivity and feasibility (Connors et al., 2021; Arnal-Bernardino & Arnal-Velasco, 2025). Critical knowledge gaps exist: 46.2% of healthcare professionals lack knowledge of burnout prevention methods, and educational interventions using theory-driven frameworks show promise particularly in resource-constrained and rural settings (Ivashchenko & Nesterenko, 2025; Dangal et al., 2025).

Future directions require system-level interventions addressing work organization, leadership, care environments, and integration of professional well-being into patient safety strategies and healthcare policy; effective approaches must combine institutional support with individual empowerment, address moral distress and ethical challenges, and extend research to underrepresented populations (Bagatini et al., 2026; Simões et al., 2025; Tang et al., 2025).

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