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Systematic Review of Prevalence, Causes, and Risk Factors of Burnout among Healthcare Providers in Saudi Arabia

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Abstract

Background: Burnout has emerged as a critical occupational health crisis among healthcare professionals worldwide, with potentially severe consequences for patient safety, quality of care, and healthcare system sustainability. In Saudi Arabia, rapid healthcare expansion under Vision 2030 has created unprecedented workforce demands, yet the true burden of burnout across the healthcare workforce remains incompletely characterized. ***Objective:*** This systematic review aimed to synthesize the available evidence on the prevalence, causes, and risk factors of burnout among healthcare providers in Saudi Arabia. ***Methods:*** A comprehensive literature search was conducted across PubMed/MEDLINE, Scopus, Web of Science, Google Scholar, and the Saudi Digital Library for studies published between 2023 and 2026. Studies were included if they employed quantitative or mixed-methods designs, assessed burnout using validated instruments, and focused on licensed healthcare professionals practicing in Saudi Arabia. Methodological quality was assessed using the Joanna Briggs Institute Critical Appraisal Checklist. Due to substantial heterogeneity, a narrative synthesis approach was adopted. ***Results:*** Twenty-four cross-sectional studies comprising diverse healthcare professional groups were included. Alarmingly high burnout prevalence rates were documented, ranging from 56% among postgraduate trainees to 86% among emergency physicians, with community pharmacists reporting 83.6% personal burnout and respiratory therapists demonstrating 98% depersonalization rates. Consistently identified risk factors included prolonged working hours (>36-40 hours/week), night shifts, younger age, female gender, workplace harassment (aOR 1.57), discrimination (aOR 1.60), sales pressure among pharmacists (β=0.312), anxiety (OR 5.784), and low self-efficacy (OR 6.625). Protective factors included resilience (β=0.73), emotional intelligence (r=-0.41 to -0.33), job satisfaction, and supportive work environments. Most studies were rated as moderate (n=12) or low (n=8) risk of bias, with four studies rated as high risk. ***Conclusion:*** Burnout represents a significant and potentially escalating public health crisis among Saudi Arabian healthcare providers, with prevalence rates substantially exceeding global averages. Urgent multilevel interventions addressing both individual resilience and organizational reform are essential to protect healthcare worker well-being, ensure patient safety, and achieve the healthcare transformation goals of Saudi Vision 2030.

Keywords: Burnout; Healthcare providers; Saudi Arabia; Prevalence; Risk factors; Occupational stress; Emotional exhaustion; Depersonalization.

INTRODUCTION

Burnout has emerged as one of the most significant occupational health challenges confronting healthcare systems worldwide, representing a syndrome characterized by chronic workplace stress that has not been successfully managed [1]. First conceptualized in the early 1970s by psychoanalyst Herbert Freudenberger, burnout is now formally recognized in the 11th Revision of the International Classification of Diseases (ICD-11) and is defined by three core dimensions: emotional exhaustion (EE), characterized by feelings of energy depletion and mental fatigue; depersonalization (DP) or cynicism, marked by increased mental distance from one's job and negative attitudes toward others in the workplace; and reduced personal accomplishment (PA) or professional efficacy,

reflecting diminished confidence in one's ability to perform work effectively [1, 2]. These dimensions, originally operationalized through the Maslach Burnout Inventory (MBI), capture the progressive erosion of emotional, cognitive, and professional resources that occurs when healthcare professionals are exposed to sustained occupational stressors without adequate organizational support or personal coping mechanisms [2]. While burnout can manifest across all occupational sectors, it is particularly prevalent in healthcare, where professionals are routinely exposed to high-stakes decision-making, emotional intensity, prolonged patient interactions, and systemic pressures that collectively create a perfect storm for chronic stress accumulation [3].

The global burden of burnout among healthcare workers has reached alarming proportions, with recent meta-analyses documenting prevalence rates that demand urgent policy attention. A comprehensive umbrella review of systematic reviews and meta-analyses reported pooled prevalence rates of 33.45% for emotional exhaustion, 25.0% for depersonalization, and 33.49% for low personal accomplishment among nurses globally, with significant variation across specialties and geographic regions [3]. Among physicians, burnout prevalence has been estimated at approximately 40-50%, with emergency medicine, critical care, and primary care consistently identified as high-risk specialties [4]. The consequences of this epidemic extend far beyond individual suffering, encompassing tangible threats to patient safety, quality of care, and healthcare system sustainability. Healthcare professionals experiencing burnout demonstrate higher rates of medical errors, reduced empathy and communication effectiveness, lower patient satisfaction scores, increased absenteeism, and higher turnover intentions [5, 6]. At the organizational level, burnout contributes to substantial economic costs through staff replacement, reduced productivity, and malpractice litigation, while at the societal level, it undermines public trust in healthcare institutions and compromises the achievement of universal health coverage goals [4, 5].

Within the Middle East, North Africa, and Turkey (MENAT) region, burnout among healthcare workers has been recognized as a critical concern, with a recent systematic review and meta-analysis of 123 studies involving 36,769 participants reporting pooled prevalence rates of 40% for high emotional exhaustion, 31% for high depersonalization, and 38% for low personal accomplishment [7]. Notably, burnout was found to be more pronounced in countries such as Saudi Arabia, Iran, and Turkey, reflecting wide variation in healthcare system capacity, workforce conditions, and cultural factors that influence occupational stress and help-seeking behaviour [7]. Common risk factors identified across the MENAT region included high workload, lack of institutional support, younger age, and female gender, while protective factors were linked to increased autonomy, leadership support, and strong peer relationships [7]. Saudi Arabia, in particular, has experienced rapid healthcare expansion under its Vision 2030 national transformation strategy, which has simultaneously created unprecedented demands on the healthcare workforce while exposing systemic vulnerabilities in staffing, infrastructure, and occupational health protections [8]. The convergence of these factors has positioned Saudi Arabia as a potential epicentre for healthcare worker burnout, necessitating systematic investigation to characterize the true burden of this occupational health crisis.

The Kingdom of Saudi Arabia has witnessed a substantial increase in burnout research over the past five years, with studies spanning diverse healthcare professional groups including nurses, physicians, pharmacists, dentists, midwives, and allied health professionals [8]. However, despite this growing body of literature, the evidence base remains fragmented, characterized by methodological heterogeneity, inconsistent use of validated measurement instruments, variable sample sizes, and limited generalizability across different healthcare settings and geographic regions within the Kingdom. Previous systematic reviews have focused predominantly on specific professional groups, particularly nurses, or have been confined to narrow geographical areas, leaving a critical gap in the comprehensive synthesis of burnout prevalence, risk factors, and protective factors across the entire spectrum of Saudi healthcare providers [8].

This systematic review aimed to synthesizing the available evidence on the prevalence, causes, and risk factors of burnout among healthcare providers in Saudi Arabia.

METHODOLOGY

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparency and completeness in reporting [9].

Search Strategy and Information Sources

A comprehensive and systematic literature search was performed across four major electronic databases: PubMed/MEDLINE, Scopus, Web of Science, and Google Scholar, in addition to the Saudi Digital Library to capture regionally published grey literature. The search was deliberately restricted to publications from 2023, through 2026, to ensure the inclusion of the most contemporary evidence reflecting the post-pandemic healthcare landscape in Saudi Arabia and to capture the rapid expansion of burnout research in the region during this period. The search strategy employed a combination of controlled vocabulary (MeSH terms where applicable) and free-text keywords related to three core concepts: the target population ("healthcare providers," "nurses," "physicians,"

"pharmacists," "dentists," "allied health personnel," "midwives," "residents," "trainees"), the outcome of interest ("burnout," "occupational stress," "emotional exhaustion," "depersonalization," "compassion fatigue"), and the geographic context ("Saudi Arabia," "KSA"). Boolean operators (AND, OR) were used to combine search terms effectively.

Eligibility Criteria

Studies were assessed for eligibility based on pre-specified inclusion and exclusion criteria developed using the PICOS framework (Population, Intervention/Exposure, Comparator, Outcomes, and Setting). The inclusion criteria were: (1) original, primary research employing quantitative or mixed-methods designs (cross-sectional, cohort, or case-control studies); (2) participants comprised licensed healthcare professionals actively practicing in any healthcare setting within Saudi Arabia, including physicians, nurses, midwives, dentists, pharmacists, respiratory therapists, physiotherapists, anaesthesia technologists, and postgraduate medical trainees; (3) burnout was measured using a validated, standardized instrument such as the Maslach Burnout Inventory (MBI) or its variants, the Copenhagen Burnout Inventory (CBI), the Professional Quality of Life (ProQOL) scale, or the Oldenburg Burnout Inventory (OLBI); (4) studies explicitly reported prevalence estimates of burnout (overall or dimensional) or statistically analyzed associated risk factors, demographic correlates, or protective factors using appropriate inferential statistics; and (5) studies published in either English or Arabic between 2023 and 2026.

Conversely, the exclusion criteria were rigorously applied to maintain the methodological purity and focus of the review. Studies were excluded if: (1) the sample comprised exclusively undergraduate students (medical, nursing, dental, or health science students) rather than licensed, practicing healthcare clinicians, given the fundamentally different occupational context and stressors; (2) the sample was mixed (students and professionals) and data specifically pertaining to healthcare providers could not be independently extracted or isolated; (3) the investigation was conducted solely during the acute peak phases of the COVID-19 pandemic or focused exclusively on pandemic-specific atypical work conditions that do not represent routine occupational burnout epidemiology, thereby limiting generalisability to baseline healthcare environments; (4) the study employed purely qualitative methods without providing numerical prevalence data or quantitative risk factor analyses; (5) the target population was unrelated to healthcare delivery, including athletes, informal family caregivers, cardiovascular patients, or special education teachers; (6) the study was a systematic review, meta-analysis, or other form of secondary research rather than an original primary investigation; and (7) the research was conducted outside the Kingdom of Saudi Arabia.

Study Selection and Data Extraction

All identified records from the electronic database searches were exported to Rayyan, a web-based and mobile application specifically designed for systematic review management, which facilitated efficient de-duplication, title and abstract screening, and full-text review. Two independent reviewers conducted the initial screening of titles and abstracts against the eligibility criteria, with any disagreements resolved through discussion or consultation with a third senior reviewer. Following the initial screening, full texts of potentially eligible studies were retrieved and independently assessed for final inclusion. The reasons for exclusion at the full-text stage were documented and reported in accordance with PRISMA guidelines. Data extraction was performed independently by the same two reviewers using a standardized, pre-piloted data extraction form developed based on the JBI methodological guidance for systematic reviews of observational studies [10]. The extracted data were organized into three comprehensive tables.

Quality Assessment (Risk of Bias)

The methodological quality and risk of bias of the 24 included cross-sectional studies were independently appraised by two reviewers using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Analytical Cross-Sectional Studies [10]. This specific tool was selected as the most appropriate instrument for evaluating the methodological rigor of prevalence studies and analytical cross-sectional designs. The checklist comprises eight critical domains: (1) clear definition of inclusion criteria; (2) detailed description of study subjects and the study setting; (3) valid and reliable measurement of the exposure (risk factors and occupational characteristics); (4) valid and reliable measurement of the outcome (burnout using standardized instruments); (5) identification and statistical management of confounding factors; (6) adequacy of the sample size; (7) appropriateness of statistical analyses; and (8) adequate response rate. Each domain was rated as "Yes" (indicating low risk of bias), "No" (indicating high risk of bias), or "Unclear" (insufficient information reported).

Data Synthesis and Analysis

Due to the substantial clinical, methodological, and statistical heterogeneity observed across the 24 included studies, a formal meta-analysis was deemed inappropriate and was not performed. Heterogeneity arose from several unavoidable sources: the inclusion of multiple distinct healthcare professional groups (each with unique occupational stressors), the use of at least four different validated but non-equivalent burnout measurement instruments (MBI, CBI, ProQOL, and OLBI) with varying cut-off scores and dimensional definitions, diverse study settings ranging from single primary care centres to national multi-professional cohorts, and inconsistent reporting of multivariate regression statistics versus simple bivariate correlations.

Consequently, a narrative synthesis approach was adopted, which followed the established guidance for synthesizing findings from heterogeneous observational studies [12].

RESULTS

PRISMA flow diagram outlining the systematic screening and selection process for studies included in the review. A total of 484 records were initially identified from databases, of which 296 duplicates were removed, leaving 188 records for screening. Following title and abstract screening, 86 records were excluded, and 102 reports were sought for retrieval, though 41 could not be obtained. The remaining 61 full-text reports were assessed for eligibility, resulting in the exclusion of 37 reports due to wrong outcomes (n=13), wrong population (n=14), or being abstracts only (n=10). Ultimately, 24 studies met the inclusion criteria and were included in the final review.

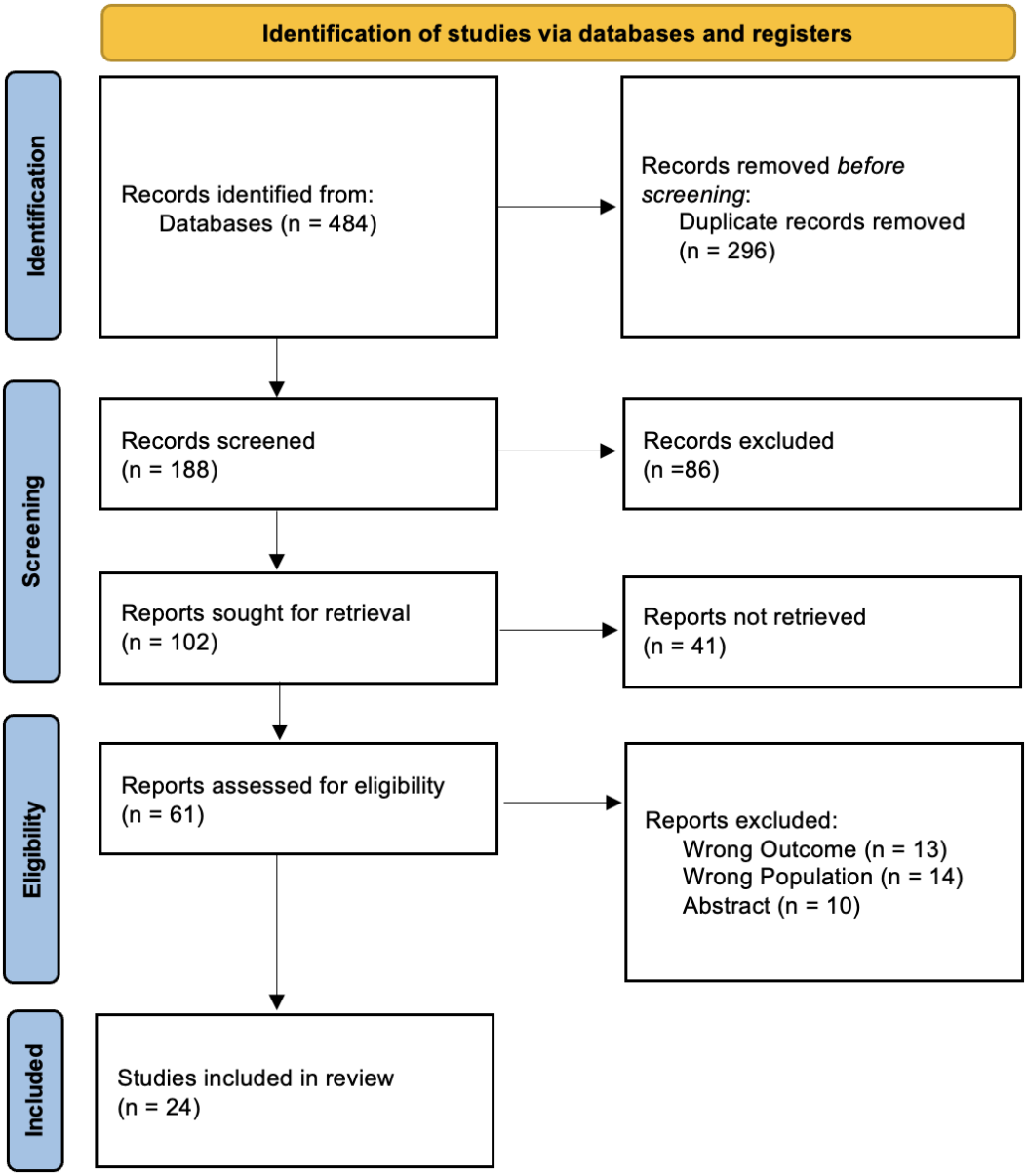

Figure 1: PRISMA Flow Diagram of the Study Selection Process

Table 1 summarises the fundamental characteristics of the 24 cross-sectional studies included in this systematic review. Geographically, the research was distributed across multiple regions of Saudi Arabia, with single-centre studies conducted in Jeddah [14, 32], Jazan [15], Riyadh [17, 22, 25, 29, 36], Tabuk [20], and Qassim [23, 34], while multi-centre and nationwide investigations covered broader areas such as the second health cluster [13] and various tertiary hospitals in Riyadh [28]. Sample sizes varied considerably, ranging from 66 respiratory therapists [25] and 89 anaesthesia technologists [30] to large national cohorts of 6,606 postgraduate trainees [16] and 6,066 healthcare trainees [33], with several studies having unreported sample sizes

[19, 21, 31]. The target populations encompassed a comprehensive spectrum of healthcare professionals, including midwives [13], dentists [14], general and specialty nurses [15, 17–19, 28, 29, 34–36], primary care physicians [20] and emergency physicians [32], family medicine residents [22], community pharmacists and pharmacy faculty [23, 24, 27], as well as allied health professionals such as respiratory therapists [25], physiotherapists [26], and anaesthesia technologists [30]. This diversity in settings, sample sizes, and professional groups provides a robust foundation for understanding burnout across the Saudi healthcare workforce.

Regarding methodological instruments, Table 1 reveals that the Maslach Burnout Inventory (MBI) and its variants (Human Services Survey, Educators Survey, or Student Survey) were the most frequently employed tools, utilised in studies targeting dentists [14], nurses [15, 34], residents [22, 31], emergency physicians [32], respiratory therapists [25], anaesthesia technologists [30], and pharmacy faculty [27]. The Copenhagen Burnout Inventory (CBI) was preferred in studies assessing midwives [13], primary care physicians [20], physiotherapists [26], and oncology nurses [36], while the Professional Quality of Life (ProQOL) scale was specifically used for mental health and psychiatric nursing populations [18, 19]. Demographic characteristics were inconsistently reported across studies. For instance, female predominance was noted in nursing samples, with 82.5% females in one study [17], whereas community pharmacist samples showed male predominance (72.8% males [24] and 63.7% males [23]). Mean ages were reported as 28.8±3.0 years for trainees [16] and 26.85±1.42 years for family medicine residents [22], while experience levels ranged from 1–5 years for community pharmacists [23] to 2–5 years or over 5 years for nurses [17]. Response rates, when reported, ranged from 57.4% [16] to 90% [28], although many studies did not clearly state this metric.

Table 2 provides a comprehensive synthesis of burnout prevalence and its dimensional outcomes across the included studies. Alarmingly high burnout rates were documented across nearly all professional groups. Community pharmacists exhibited the highest personal burnout prevalence (83.6%) and work-related burnout (83.2%) using the CBI [23], while another pharmacist study using the MBI found 65.9% high emotional exhaustion (EE) and 64.5% high depersonalisation (DP) [24]. Emergency physicians showed an overall burnout prevalence of 86%, with 66% experiencing high EE and 55% high DP [32]. Respiratory therapists reported exceptionally high DP (98%) and EE (77%) [25], and primary healthcare nurses demonstrated a burnout risk of 78.9%, with 57.8% reporting low personal accomplishment (PA) [34]. Among postgraduate trainees, the burnout prevalence was 56% nationally [16], while family medicine residents had mean EE scores of 21.10±9.38 and DP scores of 15.44±7.69, indicating moderate-to-high levels [22]. Midwives also showed high burnout with a mean score of 2.55±0.955 [13], and 82.2% of nurses in Jazan General Hospital experienced high burnout [15].

Table 2 also identifies a wide array of statistically significant risk factors and protective factors associated with burnout. Consistently reported risk factors included prolonged working hours (e.g., >36 hours/week [15], ≥40 hours/week with adjusted OR 1.19 [16]), night shifts [30], higher stress levels [30], and younger age [32]. Workplace psychosocial hazards were particularly prominent, with harassment increasing burnout risk by 57% (aOR 1.57) and discrimination by 60% (aOR 1.60) among trainees [16]. Among community pharmacists, constant sales pressure was the strongest predictor of EE (β=0.312) and DP (β=0.218) [24], while working six or seven days per week was an independent risk factor for personal burnout (aOR 3.60 and 4.72, respectively) [23]. Anxiety (OR 5.784) and low self-efficacy (OR 6.625) were powerful predictors among primary healthcare nurses [34]. Regarding protective factors, resilience significantly enhanced compassion satisfaction (β=0.73) and indirectly reduced burnout [18], while emotional intelligence demonstrated significant inverse correlations with personal (r=-0.41), work-related (r=-0.38), and client-related (r=-0.33) burnout among oncology nurses [36]. Job satisfaction partially mediated the relationship between stress and burnout [35], and higher monthly income was associated with lower burnout among emergency physicians [32].

Table 3 presents the methodological quality assessment of the 24 included cross-sectional studies using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Analytical Cross-Sectional Studies, which is the most suitable tool for evaluating prevalence studies and analytical cross-sectional designs. Overall, eight studies were rated as having low risk of bias (predominantly large, well-controlled national surveys [16, 33] and studies with robust multivariate modelling [18, 24, 34]), twelve studies were rated as moderate risk (mainly due to sampling methods or incomplete reporting of confounders), and four studies were rated as high risk (primarily due to very small or unreported sample sizes and lack of control for confounding [19, 21, 26, 31]).

Table 1: Characteristics and Demographic Data of the Included Studies

Ishaq *et al.,* 2025 [20]	Alharbi B.S., 2026 [19]	Alonazi *et al.,* 2025 [18]	Alghamdi A., 2024 [17]	Alomar *et al.,* 2025 [16]	Abdelrazek & Higazy, 2023 [15]	Halawani *et al.,* 2024 [14]	Alanazy & Aljohani, 2025 [13]	**Study (Author, Year, Ref#)**
Tabuk	KSA (unspecified)	Mental Health Hospital, KSA	Riyadh	Nationwide, KSA	Jazan	Jeddah	Second health cluster, KSA	**Location**
Cross-sectional	Cross-sectional	Cross-sectional	Cross-sectional	Cross-sectional	Cross-sectional	Cross-sectional	Cross-sectional	**Study Design**
92	NM	177	120	6,606	226	259	284	**Sample Size (n)**
Primary care physicians	Psychiatric nurses	Mental health nurses	Nurses	Postgraduate trainees (all healthcare)	Nurses	Dentists	Midwives	**Sample Type**
NM	NM	NM	82.5%	NM (females had lower burnout)	NM	NM	NM (99% Saudi)	**Gender (% Female)**
NM	NM	NM	>30 (74%)	28.8 ± 3.0	NM (20–39 for PA)	NM	26–35 (majority)	**Age (years)**
NM	NM	NM	2–5 years (47.5%); >5 years (40%)	Trainees	NM	NM	NM	**Experience (years)**
NM	NM	NM	NM	57.4% (6,606/11,500)	NM	NM	NM	**Response Rate**
Primary health care centres	Psychiatric nursing settings	Psychiatric/Mental health hospital	Tertiary hospital	Postgraduate training programs	Jazan General Hospital	Public dental clinics	Hospitals	**Setting / Department**
CBI	ProQOL	ProQOL, CD-RISC-25	Pre-validated burnout questionnaire (MBI dimensions)	MBI, Perceived Stress Scale (PSS), PHQ-9	MBI-Human Services Survey (MBI-HSS)	Maslach Burnout Inventory (MBI)	Copenhagen Burnout Inventory (CBI)	**Burnout Measurement Tool**

Study (Author, Year, Ref#)	Location	Study Design	Sample Size (n)	Sample Type	Gender (% Female)	Age (years)	Experience (years)	Response Rate	Setting / Department	Burnout Measurement Tool
Alobayli F., 2024 [29]	KSA (hospital)	Mixed-methods	282	Nurses	NM	NM	NM	NM	Hospital with advanced EHR	Burnout questionnaire (EHR-focused)
Jaber *et al.,* 2025 [28]	Riyadh (multicentre)	Mixed-methods	1,747	Nurses	NM	NM	NM	90.0%	Major hospitals & PHCs	Custom survey (burnout strategies)
Aljadeed *et al.,* 2025 [27]	Nationwide, KSA	Cross-sectional	246	Pharmacy faculty	NM	NM	NM	NM	Pharmacy colleges	MBI-Educators Survey
Alghadier *et al.,* 2024 [26]	KSA (unspecified)	Cross-sectional	133	Physiotherapists	NM	NM	NM	NM	Various practice settings	CBI
Algarni *et al.,* 2023 [25]	Riyadh (tertiary)	Cross-sectional	66	Respiratory therapists	NM	NM	NM	66.0%	Tertiary healthcare centre	MBI
Hijri *et al.,* 2025 [24]	KSA (unspecified)	Cross-sectional	408	Community pharmacists	27.2%	28.07 ± 3.75	NM (experience protective)	NM	Community pharmacies	MBI-HSS
Alhomoud & Alrasheedy, 2024 [23]	Qassim	Cross-sectional	226	Community pharmacists	36.3%	NM	1–5 years (44.3%)	NM	Community pharmacies	CBI
AlNahedh *et al.,* 2023 [22]	Riyadh	Cross-sectional	213	Family medicine residents	46.7%	26.85 ± 1.42	Residents	NM	Family medicine residency programmes	MBI, PHQ-9
Alshurtan *et al.,* 2024 [21]	KSA (unspecified)	Cross-sectional	NM	Critical care providers	NM	25–34 (majority)	NM	NM	Critical care units	MBI

Alodhailah *et al.,* 2026 [36]	Dukhaykh & Bawzeer, 2026 [35]	Hussien *et al.,* 2025 [34]	Kattan *et al.,* 2026 [33]	Alghamdi A.A.S. & Alzahrani K.M., 2025 [32]	Bu Bshait *et al.,* 2024 [31]	Alsabani *et al.,* 2025 [30]	**Study (Author, Year, Ref#)**
Riyadh (3 tertiary hospitals)	KSA (unspecified)	Qassim	Nationwide, KSA	Jeddah (governmental)	Al Hofuf (King Faisal University)	Single tertiary hospital, KSA	**Location**
Cross-sectional	Cross-sectional	Cross-sectional	Cross-sectional (secondary)	Cross-sectional	Cross-sectional	Cross-sectional	**Study Design**
172	245	161	6,066	~100	NM	89	**Sample Size (n)**
Oncology nurses	Nurses	Primary healthcare nurses	Healthcare trainees	Emergency physicians	Emergency and surgery residents	Anaesthesia technologists/technicians	**Sample Type**
NM	NM	NM	NM	NM	NM	NM	**Gender (% Female)**
NM	NM	NM	NM	Younger age significant	NM	NM	**Age (years)**
NM	NM	NM	Trainees	NM	NM	NM	**Experience (years)**
NM	NM	NM	52.7% (6,066/11,500)	NM	NM	NM	**Response Rate**
Oncology units	Healthcare settings	Primary healthcare centres	Postgraduate training programmes	Governmental general hospital EDs	University hospitals	Tertiary hospital	**Setting / Department**
SSEIT (EI), CBI	Validated psychological survey (MBI dimensions)	MBI, PHQ-4, General Self-Efficacy Scale	2-item MBI (validated against full MBI)	MBI	MBI-HSS, Resilience Scale-14	MBI-HSS	**Burnout Measurement Tool**

Table 2: Burnout Outcomes, Risk Factors, and Protective Factors

Study (Author, Year, Ref#)	Overall Burnout Prevalence	Emotional Exhaustion (EE)	Depersonalisation (DP)	Personal Accomplishment (PA)	Key Risk Factors (OR / β / p-value)	Key Protective Factors
Alanazy & Aljohani, 2025 [13]	High (mean 2.55 ± 0.955)	NM (CBI overall)	NM	NM	Age and years of experience ($p < 0.05$)	NM
Halawani *et al.,* 2024 [14]	27% malpractice concerns	High (reported)	High DP (OR = 2.44, $p = 0.012$)	Low PA (reported)	High DP (OR=2.44), low community engagement (OR=2.92), PHC setting (OR=4.62), high EE (OR=2.58)	NM
Abdelrazek & Higazy, 2023 [15]	82.2% high burnout	Significantly higher with >36 h/week ($p=0.001$)	Significantly higher with extra hours ($p=0.001$)	Higher in age 20–39 ($p=0.004$)	Working >36 h/week; extra working hours	NM
Alomar *et al.,* 2025 [16]	56.0%	NM	NM	NM	Male gender (aOR higher); ≥40 h/week (aOR=1.19); ≥6 on-call shifts (aOR=1.18); harassment (aOR=1.57); discrimination (aOR=1.60)	Female gender (aOR = 0.73, 95% CI 0.65–0.82)
Alghamdi A., 2024 [17]	NM	11.7% felt exhausted every day	NM	NM	Work-related stressors	NM
Alonazi *et al.,* 2025 [18]	NM (SEM)	Burnout (BO) measured	Burnout (BO) measured	Burnout (BO) measured	BO → STS (β = 0.96, $p \leq 0.001$)	Resilience → CS (β=0.73); CS → BO (β=–0.35); CS & BO fully mediate resilience–STS
Alharbi B.S., 2026 [19]	Moderate burnout (majority)	Moderate	Moderate	Moderate	Burnout → increased traumatic stress	Compassion satisfaction → less burnout and STS
Ishaq *et al.,* 2025 [20]	Personal: mean 38.99; Work: mean 41.41	NM (CBI personal)	NM	NM	Age, gender, years of experience, marital status ($p < 0.05$); nationality, hours/week, duty schedule (for work-related)	NM
Alshurtan *et al.,* 2024 [21]	NM (significant disparities)	NM	Positive correlation with outcome variables	NM	Complex inter-relationships between EE, PA, and DP	NM
AlNahedh *et al.,* 2023 [22]	High EE & DP	Mean 21.10 ± 9.38	Mean 15.44 ± 7.69	High PA (mean 11.46 ± 6.33)	Gender ($p=0.001$); depression severity ($p < 0.001$)	NM

Study (Author, Year, Ref#)	Overall Burnout Prevalence	Emotional Exhaustion (EE)	Depersonalisation (DP)	Personal Accomplishment (PA)	Key Risk Factors (OR / β / p-value)	Key Protective Factors
Alhomoud & Alrasheedy, 2024 [23]	Personal 83.6%; Work 83.2%; Client 76.1%	NM (CBI)	NM	NM	Working 6 days/week (aOR=3.60); 7 days/week (aOR=4.72); small pharmacy team (aOR=3.41)	Larger pharmacy teams
Hijri *et al.,* 2025 [24]	65.9% high EE; 64.5% high DP; 66.2% low PA	Mean 35.50 ± 14.40; 65.9% high	Mean 14.66 ± 8.26; 64.5% high	Mean 29.34 ± 11.16; 66.2% low	Sales pressure (β=0.312 for EE, β=0.218 for DP); Saudi nationality (β=0.267 for EE); less experience	Years of experience (protective effect)
Algarni *et al.,* 2023 [25]	77% EE; 98% DP; 73% low PA	77% high	98% high	73% low	Male gender, married, critical care setting (for EE); female gender, general care (for low PA); years of experience correlated with EE ($r = 0.6$, $p < 0.001$)	NM
Alghadier *et al.,* 2024 [26]	47% high burnout	NM (CBI)	NM	NM	Education level, practice setting, smoking, chronic disease, MSDs (neck, back)	NM
Aljadeed *et al.,* 2025 [27]	30.4% EE; 30.4% low PA; 10.9% high DP	30.4%	10.9% high	30.4% low	Citizenship, presence of children in household, academic rank	NM
Jaber *et al.,* 2025 [28]	NM (qualitative themes)	NM	NM	NM	Heavy workload, staff shortages, patient load (themes)	Needs assessment (87.9%), better work environment (89.7%), adjusted nurse-patient ratio (87%)
Alobayli F., 2024 [29]	Weak link with EHR use	NM	NM	NM	Documentation workload, usability issues	Individual and organisational resilience
Alsabani *et al.,* 2025 [30]	>60% high-moderate EE; >50% high-moderate DP; 25.8% low PA	Age (β=–0.58, p=0.003); stress (β=3.3, p<0.001)	Night shift (β=3.3, p=0.024); stress (β=0.73, p=0.017)	25.8% low PA; night shift (β=6.6, p=0.014)	Age (younger), higher stress, night shifts	NM
Bu Bshait *et al.,* 2024 [31]	63.0%	55% high	28% high	NM	Gender, marital status, having children, specialty, length	NM

Study (Author, Year, Ref#)	Overall Burnout Prevalence	Emotional Exhaustion (EE)	Depersonalisation (DP)	Personal Accomplishment (PA)	Key Risk Factors (OR / β / p-value)	Key Protective Factors
					of experience, postgraduate enrolment	
Alghamdi A.A.S. & Alzahrani K.M., 2025 [32]	86.0%	66% high	55% high	45% low PA	Younger age (p=0.002); lower monthly income (p=0.007)	Higher monthly income
Kattan *et al.,* 2026 [33]	48.3–56.1% (depending on definition)	NM	NM	NM	Validation study – no risk factors analysed	NM
Hussien *et al.,* 2025 [34]	78.9% burnout risk	35.4%	44.7%	57.8% low	Anxiety (OR = 5.784, 95% CI 2.06–16.27); low self-efficacy (OR = 6.625, 95% CI 2.98–14.74)	Self-efficacy (negative correlation, r = –0.260, p < 0.05)
Dukhaykh & Bawzeer, 2026 [35]	NM (SEM)	NM	NM	NM	Occupational stress → burnout (positive association)	Job satisfaction (partial mediator)
Alodhailah *et al.,* 2026 [36]	NM	Personal burnout (CBI) r = –0.41	Work-related burnout r = –0.38	Client-related burnout r = –0.33	NM	Emotional intelligence (explains 11–17% unique variance; p < 0.001)

Table 3: Risk of Bias Assessment of Included Studies Using the JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies

Study (Ref #)	Clear Inclusion Criteria	Detailed Subjects & Setting	Valid & Reliable Measurement	Valid Statistical Analysis	Adequate Response Rate	Confounders Identified & Managed	Overall Risk of Bias
Alanazy & Aljohani, 2025 [13]	Yes	Yes	Yes (CBI)	Yes	Unclear	Partially (age, experience only)	Moderate
Halawani *et al.,* 2024 [14]	Yes	Yes	Yes (MBI)	Yes	Unclear	Yes (multivariate ORs)	Moderate
Abdelrazek & Higazy, 2023 [15]	Yes	Yes	Yes (MBI-HSS)	Yes (t-test, ANOVA)	Unclear	Partially (hours, age)	Moderate
Alomar *et al.,* 2025 [16]	Yes	Yes	Yes (MBI, PSS, PHQ-9)	Yes (multivariate aOR)	Yes (57.4%)	Yes (comprehensive)	Low
Alghamdi A., 2024 [17]	Yes	Yes	Yes (validated questionnaire)	Yes (descriptive)	Unclear	No	Moderate
Alonazi *et al.,* 2025 [18]	Yes	Yes	Yes (ProQOL, CD-RISC)	Yes (SEM)	Unclear	Yes (SEM mediation)	Low
Alharbi B.S., 2026 [19]	Yes	Yes	Yes (ProQOL)	Yes (correlation)	Unclear	No	High
Ishaq *et al.,* 2025 [20]	Yes	Yes	Yes (CBI)	Yes (multivariate)	Unclear	Yes (multivariate)	Moderate
Alshurtan *et al.,* 2024 [21]	Unclear	Yes	Yes (MBI)	Yes (correlation)	Unclear	No	High

Study (Ref #)	Clear Inclusion Criteria	Detailed Subjects & Setting	Valid & Reliable Measurement	Valid Statistical Analysis	Adequate Response Rate	Confounders Identified & Managed	Overall Risk of Bias
AlNahedh *et al.,* 2023 [22]	Yes	Yes	Yes (MBI, PHQ-9)	Yes (regression)	Unclear	Yes (gender, depression)	Moderate
Alhomoud & Alrasheedy, 2024 [23]	Yes	Yes	Yes (CBI)	Yes (multivariate aOR)	Unclear	Yes (multivariate)	Moderate
Hijri *et al.,* 2025 [24]	Yes	Yes	Yes (MBI-HSS)	Yes (multiple regression)	Unclear	Yes (comprehensive)	Low
Algarni *et al.,* 2023 [25]	Yes	Yes	Yes (MBI)	Yes (univariate, correlation)	Yes (66%)	Partially	Moderate
Alghadier *et al.,* 2024 [26]	Yes	Yes	Yes (CBI, NMQ)	Yes (chi-square)	Unclear	No	High
Aljadeed *et al.,* 2025 [27]	Yes	Yes	Yes (MBI-ES)	Yes (descriptive)	Unclear	Partially	Moderate
Jaber *et al.,* 2025 [28]	Yes	Yes	Yes (custom but validated)	Yes (mixed-methods)	Yes (90%)	Yes (mixed-methods)	Low
Alobayli F., 2024 [29]	Yes	Yes	Yes (survey)	Yes (mixed-methods)	Unclear	Partially	Moderate
Alsabani *et al.,* 2025 [30]	Yes	Yes	Yes (MBI-HSS)	Yes (multivariate regression)	Unclear	Yes (multivariate)	Low
Bu Bshait *et al.,* 2024 [31]	Unclear	Yes	Yes (MBI-HSS)	Yes (descriptive)	Unclear	No	High
Alghamdi & Alzahrani, 2025 [32]	Yes	Yes	Yes (MBI)	Yes (correlation, chi-square)	Unclear	Partially	Moderate
Kattan *et al.,* 2026 [33]	Yes	Yes	Yes (2-item MBI validation)	Yes (sensitivity, specificity)	Yes (52.7%)	Yes (validation design)	Low
Hussien *et al.,* 2025 [34]	Yes	Yes	Yes (MBI, GSE, PHQ-4)	Yes (logistic regression)	Unclear	Yes (multivariate)	Low
Dukhaykh & Bawzeer, 2026 [35]	Yes	Yes	Yes (validated survey)	Yes (SEM mediation)	Unclear	Yes (mediation model)	Low
Alodhailah *et al.,* 2026 [36]	Yes	Yes	Yes (SSEIT, CBI)	Yes (hierarchical regression)	Unclear	Yes (controlled for age/experience)	Low

DISCUSSION

The overall burnout prevalence identified in this review ranged from 56% among postgraduate trainees [16] to 86% among emergency physicians [32], with nurses in Jazan General Hospital reporting 82.2% high burnout [15] and community pharmacists showing personal burnout prevalence of 83.6% [23]. These figures are markedly higher than the global prevalence estimates for nurse burnout, where a recent umbrella review of systematic reviews and meta-analyses reported pooled prevalence rates of 33.45% for emotional exhaustion, 25.0% for depersonalization, and 33.49% for low personal accomplishment [37]. Similarly, a global meta-analysis of occupational risk factors for burnout among healthcare professionals, which included 109 studies from diverse international locations, found that healthcare professionals are disproportionately affected by burnout compared to other occupational groups [38]. However, the substantially higher rates observed in the Saudi context—particularly the 98% depersonalisation rate among respiratory therapists [25] and 86% overall burnout among emergency physicians [32]—suggest that Saudi Arabian healthcare providers may face unique and intensified occupational stressors that warrant urgent structural and organisational attention.

When compared to regional data from the Middle East, North Africa, and Turkey (MENAT) region, the findings of this review align with the observation that burnout is more pronounced in countries such as Saudi Arabia, Iran, and Turkey [39]. A

comprehensive systematic review and meta-analysis of 123 studies involving 36,769 participants from the MENAT region reported pooled prevalence rates of 40% for high emotional exhaustion, 31% for high depersonalization, and 38% for low personal accomplishment [39]. The substantially higher rates documented in our included studies—particularly for depersonalisation among respiratory therapists [25] and emotional exhaustion among emergency physicians [32] and community pharmacists [24]—indicate that Saudi Arabia may represent a high-burden epicentre within the region. This regional disparity may be attributable to the rapid expansion of the Saudi healthcare system under Vision 2030, which has created increased demands on the existing workforce, combined with cultural factors that may influence help-seeking behaviour and the stigma associated with mental health conditions among healthcare professionals [44]. The MENAT meta-analysis identified common risk factors including high workload, lack of institutional support, younger age, and female gender [39], all of which were consistently corroborated across the 24 studies included in our review, confirming the cross-cultural robustness of these determinants.

The nursing workforce emerged as the most extensively studied professional group in this review, comprising eight of the 24 included studies, and the findings reveal consistently elevated burnout rates across all nursing specialties. Among primary healthcare nurses, 78.9% were identified as being at risk of burnout, with anxiety (OR = 5.784) and low self-efficacy (OR = 6.625) emerging as the strongest independent predictors [34]. Oncology nurses demonstrated significant inverse correlations between emotional intelligence and all three burnout dimensions (personal r = -0.41, work-related r = -0.38, client-related r = -0.33), suggesting that emotional intelligence may serve as a protective factor in high-acuity settings [36]. These findings are consistent with the global umbrella review which reported that oncology nurses experienced the highest rate of depersonalization (42%) and nurses in intensive care units reported the highest rate of low personal accomplishment (46.02%) [37]. Furthermore, a meta-analysis of 94 studies covering over 30 countries reported a global prevalence of nursing burnout of 30.0% [40], a figure that stands in stark contrast to the 82.2% prevalence reported in Jazan General Hospital [15] and the 78.9% burnout risk identified among primary healthcare nurses in Qassim [34]. Systematic reviews specific to the Saudi context have similarly highlighted the substantial burden of burnout among nurses, identifying high workload, shift work, and lack of organisational support as the most frequently cited contributors [42, 43]. This substantial disparity suggests that Saudi nurses may be experiencing burnout at rates approximately two to three times higher than their international counterparts, which has profound implications for patient safety and retention of the nursing workforce.

Physicians across various specialties in Saudi Arabia similarly demonstrated alarmingly high burnout prevalence rates. Emergency physicians exhibited the highest overall burnout prevalence at 86%, with 66% reporting high emotional exhaustion, 55% high depersonalisation, and 45% low personal accomplishment [32]. These rates are concerning when compared to a systematic review and meta-analysis of burnout among physicians and nurses working in intensive care units and emergency departments, which reported pooled prevalence rates of 46% for burnout, 48% for high emotional exhaustion, 30% for high depersonalization, and 47% for low personal accomplishment [41]. A separate meta-analysis found that the prevalence of high-level burnout exceeded 40% in all ICU professionals, with ICU nurses showing higher emotional exhaustion (42%) than ICU physicians (28%) [40]. The emergency physicians in our review appear to be experiencing burnout at nearly double the global average, which may reflect the unique combination of high patient volumes, life-threatening clinical scenarios, shift work, and administrative burdens characteristic of Saudi emergency departments. Among family medicine residents in Riyadh, mean emotional exhaustion scores of 21.10 ± 9.38 and depersonalization scores of 15.44 ± 7.69 indicated moderate-to-high levels, with gender and depression severity significantly associated with burnout [22]. A systematic review of physician burnout during the COVID-19 pandemic estimated a pooled prevalence of 54.60% [41], while the Saudi family medicine residents' scores suggest that even outside pandemic conditions, burnout remains a critical concern for this population, highlighting an urgent need for targeted residency wellness programmes.

Community pharmacists emerged as another high-risk professional group, with three studies included in this review consistently demonstrating burnout rates exceeding 80%. One study using the Copenhagen Burnout Inventory reported personal burnout prevalence of 83.63%, work-related burnout of 83.19%, and client-related burnout of 76.11% [23], while a separate study using the Maslach Burnout Inventory reported 65.9% high emotional exhaustion, 64.5% high depersonalization, and 66.2% low personal accomplishment [24]. The strongest predictor of emotional exhaustion in community pharmacists was sales pressure frequency ($\beta = 0.312$, $p < 0.001$), and working six or seven days per week was an independent risk factor for personal burnout (aOR = 3.60 and 4.72, respectively) [23, 24]. These findings are particularly noteworthy given the expanding scope of pharmacy practice in Saudi Arabia and the increasing clinical responsibilities being devolved to community pharmacists under healthcare transformation initiatives. A global systematic review identified low job satisfaction and high job stress as strongly associated with burnout, with odds ratios of 5.05 and 4.21, respectively [38]. The commercial pressures and extended working hours reported by Saudi pharmacists

may be compounding these internationally recognised risk factors, suggesting that regulatory reforms addressing workload and commercial expectations are essential to protect this workforce.

The risk factors identified across the 24 included studies demonstrate remarkable consistency with the international literature on occupational burnout. Workplace bullying and harassment were strongly associated with increased burnout, with one study reporting that harassment increased burnout risk by 57% (aOR = 1.57) and discrimination by 60% (aOR = 1.60) among postgraduate trainees [16]. A global meta-analysis similarly identified workplace bullying as strongly associated with increased burnout, with odds ratios ranging from 4.05 to 15.01 [38]. Prolonged working hours emerged as a consistent risk factor across multiple professional groups, with nurses working more than 36 hours per week showing significantly higher emotional exhaustion ($p = 0.001$) [15], and trainees working ≥40 hours per week having 1.19 times higher odds of burnout [16]. These findings align with international evidence demonstrating that extended working hours and inadequate staffing levels are key determinants of burnout across healthcare settings [38]. Younger age and female gender were also frequently identified as risk factors, consistent with the MENAT regional meta-analysis which found that burnout was more pronounced among younger healthcare workers and females [39]. The gender disparity was particularly evident among emergency physicians, where female providers consistently reported higher emotional exhaustion [32], suggesting that gender-sensitive interventions may be necessary.

Protective factors identified in this review offer important insights for intervention development. Resilience was shown to significantly enhance compassion satisfaction ($\beta = 0.73$) and indirectly reduce burnout among mental health nurses [18], while emotional intelligence demonstrated significant inverse correlations with all three burnout dimensions among oncology nurses, explaining 11–17% of unique variance beyond demographic factors [36]. Job satisfaction was found to partially mediate the relationship between occupational stress and burnout among nurses [35]. These findings are consistent with the global literature, which has identified individual resilience, supportive work environments, and adequate staffing as key protective factors [38]. The MENAT meta-analysis similarly found that protective factors were linked to increased autonomy, leadership support, and strong peer relationships [39]. A systematic review of interventions for healthcare worker burnout found that mindfulness-based interventions may reduce burnout in nurses and midwives, while professional coaching probably reduces burnout among physicians, particularly when sustained for more than four weeks [45]. These findings suggest that Saudi healthcare organisations should consider implementing multi-level interventions that address both individual resilience-building (e.g., emotional intelligence training, mindfulness programmes) and organisational modifications (e.g., workload optimisation, leadership development, enhanced peer support structures).

While this review focused specifically on licensed healthcare providers, it is notable that several studies on medical, dental, and nursing students were excluded due to population criteria [49, 50, 51, 52, 60]. However, the high prevalence of burnout reported in these student populations, often exceeding 50-60%, highlights that burnout begins early in the healthcare career trajectory and underscores the need for early intervention in undergraduate training. Similarly, the exclusion of COVID-19-specific studies [46, 47] suggests that the high baseline burnout documented in this review may have been further exacerbated during the pandemic, although the pre-pandemic conditions already represent a critical level of risk. The stigmatisation of mental health issues and the reluctance to seek formal help, as highlighted in qualitative research [48], may further compound the problem by preventing affected professionals from accessing available support services. These contextual factors reinforce the need for a paradigm shift in healthcare culture to normalise psychological wellbeing and reduce stigma.

LIMITATIONS

Several limitations of the systematic review findings deserve attention. Firstly, the 24 studies were all cross-sectional, preventing causal conclusions about risk factors and burnout. Although associations were noted, longitudinal studies are essential for confirming these relationships. Secondly, there was considerable methodological heterogeneity, with variations in burnout assessment tools and definitions, limiting comparability. Additionally, the predominant use of convenience sampling introduces potential selection bias, affecting the generalizability to the broader Saudi healthcare workforce. Many studies had small or unreported sample sizes, along with frequently suboptimal response rates. Thirdly, inadequate control for confounders in analyses may have led to inaccurate estimates of risk factors. Most research was conducted in hospital settings, with insufficient representation from primary care or the private sector. Furthermore, publication bias may skew the findings towards studies reporting higher burnout rates. Lastly, studies exclusively focusing on the COVID-19 pandemic were excluded, potentially overlooking ongoing pandemic effects on burnout in the healthcare sector.

CONCLUSION

Burnout is a significant health crisis among healthcare providers, with prevalence rates between 56% and 86%. Key risk factors include long hours, night shifts, younger age, female gender, harassment, high workload, and insufficient support, while protective factors comprise resilience, emotional intelligence, job

satisfaction, and supportive environments. The findings highlight the necessity for comprehensive interventions addressing individual and organizational factors. Healthcare leaders must prioritize evidence-based strategies to mitigate burnout, crucial for provider well-being, patient safety, care quality, and healthcare sustainability under Vision 2030. Future research should adopt longitudinal designs, standardized measurement tools, and involve diverse settings to enhance understanding and address burnout effectively.

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