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BURNOUT AND MORAL INJURY AMONG RESIDENTS AND EARLY-CAREER PHYSICIANS: AN INTERNATIONAL REVIEW OF OBSERVATIONAL EVIDENCE

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ABSTRACT

Background. Burnout among healthcare workers is now recognised as a public-health concern in its own right, with residents and early-career physicians disproportionately affected. The construct of moral injury — distress arising when clinicians cannot act in accordance with their professional values because of system-level constraints — has been proposed as a complement to the classical burnout framework.

Aim. To synthesise contemporary observational evidence on the epidemiology of burnout, its principal risk factors, and the role of moral injury among residents and early-career physicians, with particular attention to the Polish context.

Methods. A literature review of observational studies published between 2009 and 2025 was conducted in PubMed, Scopus, and Web of Science, following the STROBE statement for reporting. Because of methodological heterogeneity, no quantitative meta-analysis was attempted; findings were integrated through qualitative narrative synthesis.

Results. Burnout prevalence in this population ranged from approximately 30% to over 60%, depending on geography, specialty, and measurement instrument [11,12]. Dominant risk factors were organisational: excessive workload, administrative load, restricted professional autonomy, and impaired work–life balance. Personal attributes rarely operated as independent predictors but appeared to modify risk. Moral injury emerged as a meaningful complement to burnout, capturing the value-conflict dimension that burnout scales tend to miss [8,9].

Conclusions. Burnout and moral injury together pose a serious challenge to healthcare systems. Prevention strategies that focus exclusively on individual resilience are unlikely to succeed; the evidence points instead to structural and organisational reform [31].

KEYWORDS

Burnout, Professional, Internship and Residency, Early-Career Physicians, Moral Injury, Mental Health, Occupational Health

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1. Introduction

The term burnout, introduced by Maslach and Jackson in the early 1980s [1], has long served as the dominant frame for understanding chronic occupational distress in the helping professions. Its three classical dimensions — emotional exhaustion, depersonalisation, and reduced personal accomplishment — describe a syndrome now documented among physicians at every career stage. Among residents and early-career physicians, the consequences extend beyond personal suffering to patient safety and to health-system sustainability, making the phenomenon a matter of clinical and policy concern rather than individual pathology.

The first decade of postgraduate practice is a particularly high-risk period [2,3]. Long duty hours, high clinical responsibility, limited decision-making autonomy, and the simultaneous formation of professional identity combine to create conditions in which chronic distress can take root quickly. For residents, this happens at exactly the time when their clinical habits and self-image as physicians are being established — a circumstance that may help explain why early-career burnout is associated with downstream effects on career trajectory and on the quality of care provided to patients [4,5].

Yet the burnout framework, however useful, has well-recognised limits. It tends to locate the source of distress within the individual — a feature that has drawn criticism for pathologising what is in many cases a normal response to abnormal working conditions. To address this gap, scholars and clinicians have increasingly turned to the concept of moral injury, originally developed in military psychology [6] and now adapted to healthcare. Moral injury describes the psychological harm that follows from participating in, witnessing, or failing to prevent acts that transgress deeply held moral beliefs [6,7]. In medicine, these acts are typically not dramatic betrayals but the cumulative experience of being unable to deliver care that meets one's own professional standards because of resource constraints, administrative pressure, or institutional priorities that conflict with clinical judgement [8,9].

The present review takes this dual framework as its starting point. It maps the recent observational evidence on burnout and moral injury among residents and early-career physicians, identifies the risk factors that recur across studies and regions, and pays particular attention to the Polish context, where structural features of the health system may amplify risk in ways that have not yet been adequately characterised.

2. Methodology

This review was prepared in accordance with the STROBE statement for the reporting of observational studies. PubMed, Scopus, and Web of Science were searched for publications dated 2009–2025. Search terms combined controlled vocabulary and free text around three concepts: burnout, moral injury, and early-career physicians (including residents and physicians within ten years of graduation).

Eligible studies were observational in design — cross-sectional, cohort, or multicentre — or systematic reviews of such studies, and were required to assess burnout and/or moral injury with a validated instrument in residents or physicians in the first decade of practice. Full-text availability in Polish or English was required.

We excluded studies confined to medical students or to non-physician health professionals, non-peer-reviewed publications, case reports, commentaries, and work using non-validated or unspecified instruments. Studies in which burnout appeared only as a marginal variable were also excluded.

The review extracted prevalence estimates, risk factors, and measurement tools. Because the included studies used different cut-offs, instruments, and definitions of burnout, no meta-analysis was attempted; findings were integrated through qualitative narrative synthesis.

3. Results

3.1. Epidemiology of burnout

Recent reviews place burnout prevalence among physicians at figures ranging from a few percent to more than 80% [10], with the wide spread reflecting less genuine variation than inconsistency in how burnout has been defined and measured. Among residents and early-career physicians, the central tendency lies between 30% and 60% [11,12], with emotional exhaustion as the most consistently elevated dimension.

In Western Europe and North America, roughly 40–60% of residents and early-career physicians report clinically meaningful burnout symptoms [12,13]. The same pattern — heavy workload, long hours, administrative burden, and a strained work–life interface — repeats across specialties, although procedural fields often report higher rates than non-procedural ones [14,15]. The principal characteristics of the studies included in this review are summarised in Table 1.

Table 1. Characteristics of observational studies on burnout among residents and early-career physicians included in the review (including Polish studies).

Author (year)	Country / region	Design	Population (N)	Instrument	Key findings
Rotenstein et al. (2018)	Global	Systematic review	Physicians > 45 000	MBI, others	Prevalence from a few % to 80.5%; very high heterogeneity in definitions and instruments
West et al. (2018)	USA	Narrative review	Physicians	MBI	High emotional exhaustion; strong association with workload
Panagioti et al. (2018)	Europe / global	Systematic review	Residents and early-career physicians	Various	Prevalence 30–60%; impact on patient safety
Low et al. (2019)	Global	Meta-analysis	Residents	Various	Mean prevalence of burnout around 51%
Obeng-Nkrumah et al. (2025)	Global	Systematic review	Residents	MBI, CBI	Dominant importance of system-level factors

Author (year)	Country / region	Design	Population (N)	Instrument	Key findings
Dyrbye et al. (2014)	USA	Cross-sectional	Residents and early-career physicians	MBI	Burnout symptoms in ~50% of respondents
Shanafelt et al. (2012)	USA	Cross-sectional	Early-career physicians	MBI	High emotional exhaustion; strong link with work–life balance
West et al. (2009)	USA	Cross-sectional	Residents	MBI	Burnout and fatigue correlated with self-reported medical errors
Tawfik et al. (2018)	USA	Multicentre	Residents / early-career physicians	MBI	Burnout > 40%; correlation with quality of care
Elmore et al. (2016)	USA	National	Surgical residents	MBI	Burnout symptoms in 69% of respondents
Prins et al. (2010)	Netherlands	Cross-sectional	Residents	MBI	High emotional exhaustion; link with work engagement
van Vendeloo et al. (2018)	Europe	Cross-sectional	Surgical residents	MBI	Burnout > 45%; higher in procedural specialties
Rodrigues et al. (2018)	Brazil / global	Systematic review	Residents	MBI	Elevated risk above 60 working hours per week
Shalaby et al. (2023)	Canada	Cross-sectional	Residents (~1100)	MBI	Burnout ~58%; on-call load a key predictor
Surawattanasakul et al. (2024)	Thailand	Cross-sectional	Residents (~430)	MBI	Burnout 46.3%; emotional exhaustion dominant
Pinho et al. (2022)	Brazil	Cross-sectional	Physicians ≤ 10 years (~1000)	MBI	> 60 h/week and low autonomy as key drivers
Owoc et al. (2021)	Poland	Cross-sectional	Physicians (~700)	MBI	High emotional exhaustion; substantial psychological distress
Gajda & Skrzypińska (2020)	Poland	Cross-sectional	Early-career physicians	MBI	Burnout symptoms in over 50% of respondents
Degen et al. (2015)	Europe	Cross-sectional	Physicians ≤ 10 years	MBI	Intention to leave the profession
Williford et al. (2018)	USA	Multicentre	Residents	MBI	Residents more vulnerable than faculty
Locke (2025)	USA	Observational	Physicians	Moral-injury scales	Moral distress more frequent than burnout

The Polish data are sparser but consistent with the international picture, and in some respects more concerning. Polish studies have documented particularly high levels of emotional exhaustion and depersonalisation, with structural factors — staff shortages, restricted clinical autonomy, organisational instability — emerging as predictors more prominently than in many Western European samples [16,17]. Polish physicians also report a stronger link between burnout and the intention to emigrate or leave clinical practice, a finding that, in a health system already facing workforce pressure, carries obvious systemic implications [18,19,20].

One further observation deserves attention. The international literature has increasingly framed physician distress through the lens of moral injury [6,8,9]; the Polish discourse has so far lagged behind. The underlying phenomena — value conflict, frustration with system constraints, the sense of being unable to practise as one was trained to — are clearly present in Polish empirical data, but they are rarely named as such. The terminological gap matters: it risks keeping the debate focused on individual coping strategies and obscuring the structural origins of the problem [21,22].

3.2. Determinants of burnout

The evidence converges on a clear hierarchy: organisational and systemic factors dominate, and individual factors play a secondary, mostly modulating, role.

At the top of the organisational list sit workload and working-time pressure. Long hours, frequent night shifts, and chronic understaffing are the most reproducible predictors across regions [3,23]. Administrative burden — the clerical load that increasingly occupies a physician's working day — appears almost as often and is now regarded as one of the more modifiable drivers [24,25]. Restricted professional autonomy, including limited say over scheduling, patient allocation, and clinical decisions, contributes independently [13,15]. Impaired work–life balance, often a consequence of the above, is both a predictor and an outcome, and it features in nearly every large study [24,26].

Individual factors — personality traits, coping style, demographic characteristics — are statistically detectable but rarely operate as independent predictors once working conditions are accounted for. They appear to modify vulnerability rather than cause burnout in their own right. The Polish data align with this pattern: structural predictors outweigh personal ones, and the contribution of personality or demographic variables is small [16,17]. A synthesised overview of risk factors across regions is given in Table 2.

Table 2. Synthesised heatmap of burnout risk factors among residents and early-career physicians across regions worldwide.

Note. ● = moderate evidence; ●● = strong evidence; ○ = limited or emerging evidence. Synthesised qualitatively across the included studies; not a quantitative meta-estimate.

Risk factor	North America	Western Europe	Eastern Europe / Poland	Latin America	Asia
Excessive workload / long hours	●●	●●	●●	●●	●●
Night-shift frequency	●●	●●	●●	●	●
Administrative burden	●●	●●	●●	●	●
Restricted professional autonomy	●●	●	●●	●	●
Impaired work–life balance	●●	●●	●●	●	●●
Understaffing / organisational strain	●	●	●●	●●	●
Value conflict / moral injury	●●	●●	○	●	●
Individual / personality factors	●	●	●	●	●

3.3. Moral injury as a conceptual extension

Moral injury offers a frame that is in some respects better suited than burnout to capture what physicians themselves describe [6,8]. Where burnout charts a trajectory of depletion, moral injury foregrounds the violation of values. A physician who is exhausted but still able to act in accordance with professional conscience is, by this account, burned out but not morally injured; a physician who is forced, repeatedly, to provide care that falls short of what they believe patients deserve is morally injured even when not yet exhausted.

Measurement is the main obstacle to integrating moral injury more fully into physician-health research [21,27]. Most existing instruments were developed in military contexts and have been adapted for healthcare with varying degrees of rigour. The result is a heterogeneous set of scales measuring overlapping but non-identical constructs — moral distress, moral residue, ethical conflict — that do not yet permit reliable cross-study comparison.

Burnout measurement is more settled, though not without problems [1,28]. The Maslach Burnout Inventory (MBI) remains the dominant instrument, used in the great majority of included studies [1]. It provides separate scores for emotional exhaustion, depersonalisation, and personal accomplishment, and has well-documented psychometric properties. The Copenhagen Burnout Inventory (CBI), with its clearer separation of work-related, patient-related, and general exhaustion, is a reasonable alternative but is used less

often [29]. The principal limitation of burnout measurement is not the instruments themselves but the absence of agreed diagnostic cut-offs: the same score can be classified as burnout in one study and as no burnout in another, and this single methodological choice is responsible for a large share of the cross-study variation in reported prevalence [28].

3.4. Consequences and intervention evidence

The consequences of burnout in this population fall into three overlapping domains. At the individual level, depressive and anxiety symptoms, sleep disturbance, reduced professional satisfaction, and a measurable decline in overall psychological well-being are consistently reported [2,24]. At the clinical level, burnout is associated with more frequent medical errors, reduced empathic engagement, and poorer physician–patient communication — outcomes that translate directly into patient safety [4,5]. At the system level, burnout is a leading driver of intention to leave practice, career shortening, and emigration; in the Polish context, the last of these is particularly salient [18,20,30].

What works? The accumulated evidence is sobering for those hoping for quick fixes. Individual-level interventions — stress management, resilience training, mindfulness — produce measurable but small and often short-lived effects [31]. The most consistent positive results come from organisational and structural interventions: reducing workload and duty hours, redesigning documentation requirements, improving the quality of specialist training, and expanding professional autonomy [31,32]. Even these interventions do not eliminate burnout, but they reduce it.

The moral-injury frame reinforces this conclusion [8,9]. If a meaningful part of physician distress originates in the gap between professional values and working conditions, the appropriate response is to close that gap rather than to train physicians to tolerate it. The implications for healthcare organisations and for health policy are direct.

4. Discussion

This review set out to map the contemporary evidence on burnout and moral injury among residents and early-career physicians, with attention to the Polish context. Four points merit emphasis.

First, the headline numbers — burnout prevalence in the 30–60% range — are now stable enough to be taken as the empirical baseline for this population [10,11,12]. The variation between studies is real but is driven more by methodological choices than by genuine geographic or specialty differences.

Second, the determinants of burnout are predominantly structural. Workload, working time, administrative load, autonomy, and work–life balance account for most of the explained variance in virtually every multivariable analysis [24,31]. Individual factors modulate risk but do not cause it. Any intervention strategy that places the primary responsibility on the individual physician is at odds with the evidence.

Third, moral injury adds something the burnout construct cannot [6,8]. It makes the ethical dimension of physician distress explicit and, in doing so, draws attention to the upstream organisational conditions that need to change. The two constructs are not competitors; they describe different facets of the same underlying problem and are most useful when used together.

Fourth, the Polish data, while still limited, point to a system under particular strain [16,17]. High levels of emotional exhaustion, a strong association with intention to emigrate, and the relative under-development of the moral-injury discourse together suggest that Poland is dealing with a more severe variant of a problem common to most healthcare systems — and one in which the structural drivers are especially prominent [17,18].

4.1. Limitations

Several limitations of the present review should be acknowledged. The included studies are methodologically heterogeneous, the measurement of both burnout and moral injury lacks standardisation, and narrative synthesis — though appropriate given the data — is inevitably more subjective than meta-analysis. Polish studies in particular are few in number, and the generalisability of their findings beyond the specific institutions sampled remains an open question. The risk-factor synthesis presented in Table 2 should be read as a qualitative overview rather than a quantitative estimate.

4.2. Implications

For research, the priorities are clear: standardise the measurement of both constructs, develop a moral-injury instrument validated in physician populations, and commission larger and more representative Polish studies [18,21,27]. For policy, the evidence is equally clear: address the working conditions, not the worker.

5. Conclusions

Burnout and moral injury together constitute a serious and under-recognised challenge to the health of the physician workforce and, by extension, to the patients and systems that workforce serves. Among residents and early-career physicians, the burden is high, the structural drivers are well characterised, and the limits of purely individual interventions are evident [24,31]. The Polish experience adds a useful perspective: it shows what the picture looks like when structural pressure is high, the workforce is mobile, and the moral vocabulary for naming the problem is not yet in common use [8,9]. Effective prevention will require moving the centre of gravity from individual resilience to organisational responsibility.

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