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Moral injury in intensive care: conceptual boundaries, burden, prevention, and organizational moral repair - a narrative review

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ABSTRACT

Moral injury describes persistent moral, psychological, social, behavioral, or spiritual harm after events appraised as violating deeply held values or involving betrayal by a trusted authority. Intensive care is a high-risk environment because clinicians repeatedly encounter treatment limitation, nonbeneficial care, death, scarcity, hierarchical constraint, and institutional failure. This narrative review integrates conceptual, epidemiological, psychometric, and intervention evidence while separating ICU-specific findings from broader healthcare-worker data. Reported moral injury prevalence across healthcare and first-responder studies ranges from 4.1% to 69.4%, reflecting substantial differences in instruments, thresholds, professions, pandemic phase, and sampling. In a meta-analysis of 33 studies involving 31,849 healthcare workers, moral injury showed moderate associations with posttraumatic stress, depression, anxiety, burnout, and suicidal ideation ($r=.30-.41$). ICU-specific evidence remains thinner and often measures moral distress rather than moral injury, preventing a precise ICU prevalence estimate. Current models plausibly connect potentially morally injurious events to persistent impairment through appraisals of agency, responsibility, harm, betrayal, and failed repair, but prospective ICU tests are scarce. The most actionable correlates are organizational: ethical climate, staffing and resource adequacy, participation in decisions, psychological safety, leadership support, and institutional trust. Intensive care cannot eliminate tragic choices, but preventable exposure and progression to persistent impairment may be reduced through transparent allocation, shared decision making, rapid ethics support, protected escalation, early voluntary support, and accountable organizational moral repair. The decisive evidence gap is the absence of adequately powered ICU trials using moral injury as a primary outcome.

KEY WORDS: Moral injury, moral distress, intensive care, healthcare professionals, ethical climate, moral repair.

INTRODUCTION

Intensive care concentrates ethically difficult decisions within a high-acuity environment: initiation, limitation, or withdrawal of life-sustaining treatment; care of dying patients and families; prioritization of scarce beds, medicines, equipment, and staff; and tension between what is technically possible and what is clinically beneficial. Occupational strain is substantial: a meta-analysis of 25 studies involving 20,617 adult ICU professionals estimated high-level burnout in 42% of physicians and 45% of nurses [1]. These figures establish the scale of clinician distress, but burnout cannot be used as a proxy for moral injury because the constructs have different defining mechanisms.

Moral injury originated in military psychiatry. Shay emphasized betrayal by legitimate authority in high-stakes situations [2], whereas Litz et al. proposed an event-appraisal process in which perpetrating, failing to prevent, or witnessing morally transgressive acts may generate guilt, shame, anger, withdrawal, and impaired functioning when the event cannot be accommodated or repaired [3]. Griffin et al., in a scoping review of 185 healthcare articles including 91 empirical studies, extended this process into a dimensional contextual model spanning individual, interpersonal, organizational, and societal influences [4]. These models are clinically useful organizing frameworks, but prospective evidence testing the complete sequence from ICU exposure to appraisal, persistent symptoms, functional impairment, and recovery remains limited. The COVID-19 pandemic intensified established ICU hazards through shortages, redeployment, repeated deaths, visitation restrictions, and perceived institutional failure [5,6]. The subsequent literature expanded quickly, but three scientific problems remain. First, moral injury is often conflated with moral distress, burnout, posttraumatic stress disorder (PTSD), or general psychological distress [7]. Second, prevalence estimates are not directly comparable because studies use different exposure and symptom instruments, thresholds, professions, cultural settings, and sampling strategies [4,8]. Third, much of the evidence is cross-sectional and healthcare-wide rather than ICU-specific, limiting causal inference and targeted prevention.

The aim of this narrative review is therefore to clarify conceptual boundaries and proposed pathways of moral injury in intensive care; critically synthesize evidence on ICU moral hazards, prevalence, consequences, and measurement; distinguish ICU-specific findings from broader healthcare-worker evidence; appraise prevention, mitigation, and treatment strategies; and identify the research designs required to move the field from association toward effective moral repair. The central argument is that innovation in critical care must include ethical and organizational system design, not only technological or pharmacological change.

MATERIAL AND METHODS

This narrative review was prepared with reference to the Scale for the Assessment of Narrative Review Articles (SANRA) [9]. PubMed/MEDLINE, Scopus, CINAHL, PsycINFO, and Google Scholar were searched for literature published from January 2020 to June 2026, with seminal earlier works identified through citation chaining.

Search concepts combined moral injury, moral distress, potentially morally injurious events (PMIEs), and moral resilience with intensive care/critical care and healthcare-professional terms; targeted searches addressed measurement, interventions, and resource-constrained settings. A bibliographic update in August 2026 was used to check publication status and quantitative claims.

Peer-reviewed empirical studies, reviews, and psychometric reports were prioritized, with preference for ICU or critical-care populations and recent evidence. Conceptual papers were retained when necessary to clarify models, but theoretical propositions were not treated as empirical findings. Because ICU-only moral injury studies remain limited, healthcare-wide evidence was included only when clearly labeled as contextual. Findings were synthesized thematically rather than pooled. No formal risk-of-bias instrument was applied; interpretation therefore gives explicit weight to design limitations, especially cross-sectional self-report, convenience sampling, reverse causation, self-selection, and common-method variance.

CONCEPTUAL BOUNDARIES AND PROPOSED PATHWAYS

Moral distress predates moral injury in healthcare. Jameton defined moral distress as knowing the ethically appropriate action while being constrained from taking it [10]. Epstein and Hamric later described moral residue, the lingering imprint after unresolved distress, and the crescendo effect, whereby repeated episodes may raise the baseline of subsequent distress [11]. Contemporary synthesis has broadened moral distress beyond constraint to include uncertainty, conflict, and dilemma-based experiences [12]. These constructs explain cumulative moral suffering, but the progression from distress to residue to injury has not been established as an inevitable longitudinal sequence.

The Litz model positions the PMIE as an initiating exposure and proposes that responsibility, controllability, violated values, and failure of accommodation or repair shape subsequent guilt, shame, anger, self-condemnation, withdrawal, and impairment [3]. Griffin et al. place these appraisals within interpersonal, organizational, and societal contexts [4]. Organizational conditions are therefore not merely background variables: they can alter exposure, agency, perceived betrayal, and opportunities for repair. This feature differentiates moral injury from models that locate the primary problem exclusively within the individual.

Moral injury also requires separation from burnout and PTSD. Burnout is a nonspecific occupational syndrome linked to chronic workplace stress, whereas moral injury is anchored to perceived transgression, responsibility, or betrayal [13]. PTSD is a formal trauma-related diagnosis organized around defined symptom clusters after qualifying exposure; moral injury is not currently a formal diagnosis and may occur with or without PTSD [14]. A meta-analysis of healthcare workers found moderate correlations between moral injury and PTSD, depression, anxiety, burnout, and suicidal ideation rather than evidence of construct equivalence [15].

A dimensional view places moral distress and injury on a moral-trauma spectrum [16], whereas a more skeptical position cautions that the injury label may be overextended to systemic moral stress in civilian

healthcare [17]. The disagreement matters because it changes the implied response: immediate ethics support for situational distress, clinical care for persistent impairment and psychiatric comorbidity, and structural reform when organizational conditions repeatedly generate the exposure.

Table 1. Conceptual distinctions relevant to intensive care.

Construct	Defining feature	ICU relevance	Implication
Moral distress	Acute/recurrent ethical disequilibrium from constraint, conflict, uncertainty, or inability to enact an ethically preferred action [10-12].	Common during nonbeneficial treatment, hierarchy, end-of-life conflict, and scarcity.	Remove immediate constraints; use communication, shared decisions, and ethics support.
Moral injury	Persistent, impairing consequences after a PMIE or betrayal, shaped by appraisal and failed repair [2-4].	May follow severe or repeated exposure involving agency, responsibility, harm, or institutional betrayal.	Assess persistence/function and context; combine clinical support with organizational moral repair.
Burnout	Occupational exhaustion/cynicism from chronic work stress; not morally specific [1,13].	Highly prevalent in ICU staff and may coexist with moral injury.	Address workload and work design; do not infer moral injury from burnout scores.
PTSD	Formal trauma-related disorder with defined symptom clusters after qualifying exposure [14].	May co-occur when events involve both threat and moral transgression.	Use validated diagnostic assessment and evidence-based treatment; assess moral meaning separately.

THE ICU AS A MORALLY HAZARDOUS ENVIRONMENT

ICU moral hazards are recurrent rather than exceptional. Multicenter evidence shows moral distress varies by profession, age, and experience, with nurses frequently reporting greater intensity because continuous bedside care can require them to enact decisions made within interprofessional hierarchies [18]. Common triggers include treatment perceived as nonbeneficial, prolongation of dying, delayed end-of-life decisions, inadequate communication, exclusion from decision making, unsafe staffing, and resource scarcity [18,19]. In a cross-sectional study of 283 critical-care providers, severe burnout affected 23.1% and moral distress contributed to burnout risk [19]. However, direct patient-level effects remain uncertain: a 2026 study of 121 ICU nurses found moderate moral distress but no statistically significant effect on end-of-life attitudes or caring behaviors [20].

Pandemic conditions amplified these hazards. Scarcity frameworks required clinicians to implement decisions involving competing claims to ventilators and ICU beds [21]. In a nationwide Dutch survey of 488

ICU professionals, nurses reported the greatest moral distress, inadequate emotional support was a prominent concern, and distress varied with perceptions of ethical climate [22]. Perceived organizational failure can additionally be appraised as betrayal; betrayal-based moral injury was associated with mental health problems among hospital workers caring for patients with COVID-19 [23]. These findings support organizational mechanisms, but cross-sectional designs cannot determine whether poor ethical climate precedes injury, is partly shaped by distressed appraisal, or operates bidirectionally.

BURDEN, CONSEQUENCES, AND THE PROBLEM OF EXTRAPOLATION

Across healthcare personnel and first responders, a review of 41 studies involving more than 14,500 participants reported moral injury prevalence from 4.1% to 69.4% [8]. This range should not be interpreted as a single population parameter. In a United States healthcare-professional sample, 23.9% met the Moral Injury Symptom Scale-Health Professional (MISS-HP) threshold associated with functional impairment [24]. In mainland China, 41.3% of 3,006 physicians and nurses met the threshold (95% CI 39.3-43.0%), and direct COVID-19 care was associated with greater odds of moral injury (OR 1.28, 95% CI 1.05-1.56) [25]. A Pakistani mixed-profession sample reported 69.4% [26]. Instrument version, threshold, professional composition, crisis phase, language, culture, and self-selected online sampling all affect these estimates.

Crucially, the field cannot yet provide a precise ICU moral injury prevalence. ICU studies often measure moral distress, while major moral injury studies commonly use mixed healthcare settings. Rushton et al. reported 32.4% above the MISS-HP threshold among 595 US healthcare workers, with higher percentages among nurses and respiratory therapists, but only 20.4% of the sample worked in critical care and an ICU-specific prevalence was not reported [6]. Burnout prevalence exceeding 40% among ICU physicians and nurses [1] likewise cannot substitute for moral injury prevalence. The defensible conclusion is that moral suffering is common in intensive care, while the frequency of persistent moral injury specifically remains uncertain.

The consequences are clinically relevant. A meta-analysis of 33 studies from 13 countries involving 31,849 healthcare workers pooled 79 effect sizes and found moderate positive associations between moral injury and PTSD, anxiety, depression, burnout, and suicidal ideation ($r=.30-.41$; all $p<.0001$), with significant heterogeneity [15]. Organizational outcomes include disengagement, absenteeism, and intention to leave. In a national Veterans Affairs study, 39% of surveyed healthcare workers were at risk for moral injury, alongside 41% at risk for posttraumatic stress, 27% for depression, and 25% for persistent burnout; management, supervisor, and coworker support and empowerment were modifiable correlates [27]. Exposure to moral stressors has also been linked with job attrition [28]. These associations justify intervention, but they do not prove direction: pre-existing symptoms may influence event appraisal, and shared self-report can inflate correlations.

MEASUREMENT: WHAT CURRENT SCALES CAN AND CANNOT ESTABLISH

Measurement should distinguish exposure, response, and function. The 10-item MISS-HP assesses moral injury symptoms and used a threshold of 36 to identify functionally impairing presentations in its original validation [29]. It does not directly quantify ICU-specific PMIE exposure and does not establish a psychiatric diagnosis. Moral distress instruments answer a different question. The 27-item Measure of Moral Distress for Healthcare Professionals was validated in 653 professionals; nurses scored higher than physicians (112.3 vs 96.3, $p=.023$), scores were markedly higher among those considering leaving (168.4 vs 94.3, $p<.001$), and ethical climate correlated inversely with moral distress ($r=-.55$) [30]. These tools are complementary, not interchangeable.

The central measurement gap is therefore an ICU-specific design that separates: (1) exposure to events such as nonbeneficial treatment, withdrawal decisions, triage, family exclusion, unsafe staffing, resource denial, hierarchical silencing, and institutional betrayal; (2) appraisal of agency, responsibility, harm, and betrayal; (3) moral emotions and symptom persistence; and (4) functional impairment. Cross-cultural adaptation also requires validation of construct meaning and thresholds before prevalence estimates are compared between languages or health systems.

PREVENTION, MITIGATION, AND MORAL REPAIR

Complete eradication of moral conflict is neither realistic nor desirable. Intensive care necessarily includes uncertainty, competing obligations, and tragic choices. The preventable target is unnecessary or repeated exposure created by remediable system failures, together with progression from a morally difficult event to persistent impairment. Prevention should therefore operate at several levels: reduce avoidable PMIEs, preserve clinician moral agency, provide early support after high-risk events, repair organizational betrayal when it occurs, and treat persistent symptoms or comorbid disorders.

Individual interventions have the largest but still indirect evidence base. Adaptive Disclosure, developed for military moral injury and traumatic loss, produced reductions in PTSD and depression in an open trial [31]. Acceptance and Commitment Therapy targets psychological flexibility and values-consistent action; a randomized workplace ACT trial reduced psychological distress among healthcare staff [32]. Neither study established efficacy for moral injury as a primary endpoint in ICU professionals. Individual treatment is most defensible when persistent guilt, shame, anger, withdrawal, loss of meaning, functional impairment, depression, PTSD, substance misuse, or suicide risk require confidential clinical assessment. Individual coping should not be used as a substitute for correcting unsafe or ethically corrosive work conditions.

Team interventions address moral agency and shared meaning. Schwartz Rounds provide multidisciplinary reflection on emotional and ethical aspects of care; across 10 United Kingdom organizations, a pre-post evaluation reported an approximately 19% reduction in psychological distress among regular attenders relative to non-attenders, although attendance was not randomized [33].

The Mindful Ethical Practice and Resilience Academy improved ethical confidence, moral competence, resilience, mindfulness, and work engagement while reducing several distress outcomes

among nurses [34]. Rapid ethics consultation, moral-case deliberation, and voluntary interprofessional debriefing are consistent with the finding that ethical climate and participation in decisions matter. Their limitation is evidence quality: controlled ICU studies using moral injury as the primary outcome are lacking.

Organizational prevention is the most important and least tested level. Modifiable conditions identified across studies include management support for worker health and safety, supervisor and coworker support, empowerment in job-related decisions, adequate resources, protected channels for raising concerns, and institutional trust [27]. Practical moral-repair actions include transparent allocation criteria, multidisciplinary input into treatment-limitation decisions, rapid ethics escalation, safe staffing and reliable supplies, leadership acknowledgment of preventable harm, fair investigation, visible accountability, communication of corrective action, and involvement of affected clinicians in redesign [35]. These are not merely wellbeing initiatives: they target the mechanisms through which preventable moral exposure and betrayal are generated.

Table 2. Evidence-informed multilevel prevention and moral-repair framework.

Level	Primary target	Evidence-informed actions	Evidence status
System	Reduce avoidable PMIE exposure	Safe staffing/supplies; transparent allocation; multidisciplinary triage/ethics support; monitor recurrent moral hazards.	Strong rationale; no ICU moral-injury-primary RCT.
Unit/team	Preserve moral agency	Include bedside staff in decisions; protected speak-up/escalation; rapid ethics support; voluntary interprofessional reflection.	Ethical-climate associations; quasi-experimental team evidence.
Early response	Interrupt persistence	Supervisor check-in; confidential voluntary support; referral when guilt, shame, withdrawal, or dysfunction persists.	Practice-supported; direct moral injury evidence limited.
Organization	Repair betrayal/prevent recurrence	Acknowledge harm; investigate failures; communicate findings; ensure accountability; involve staff in redesign and close feedback loops [27,35].	Strong conceptual/observational rationale; controlled trials sparse.
Clinical	Treat persistent impairment/comorbidity	Assess function, moral meaning, PTSD, depression, substance use, and suicide risk; provide values-based/trauma-informed care as indicated [31,32].	Evidence mostly indirect from military/general healthcare populations.

EVIDENCE FROM RESOURCE-CONSTRAINED AND CULTURALLY DIVERSE HEALTH SYSTEMS

The evidence base remains concentrated in high-income settings even though chronic shortages of staff, beds, medicines, equipment, and referral capacity may make ethical conflict a routine feature of care elsewhere [36,37]. Resource scarcity is a plausible source of PMIE exposure, but scarcity alone does not

prove moral injury; the pathway through appraisal, responsibility, betrayal, and failed repair requires direct study. A recent Sri Lankan tertiary-hospital study provides contextual evidence without establishing ICU prevalence: among 391 physicians, nurses, and healthcare support workers, 28.6% met the MISS-HP threshold and physicians had higher odds than nurses and support workers [38]. Its value is to demonstrate that clinically relevant moral injury symptoms can be detected outside high-income pandemic samples; its cross-sectional, single-center, mixed-profession design means it should not anchor broad prevalence or causal claims.

RESEARCH PRIORITIES

The first priority is temporal and causal clarity. Prospective ICU cohorts should identify PMIE exposure before or immediately after index events and follow appraisal, moral emotions, symptom persistence, functional impairment, psychiatric comorbidity, recovery, and attrition. Such studies could test whether moral distress and injury are distinct states, points on a continuum, or partially overlapping responses and whether failed repair mediates persistence [4,16,17]. Without temporal data, prevalence studies cannot distinguish incident injury from pre-existing distress, reverse causation, or selective departure of the most affected clinicians.

The second priority is construct-valid measurement: ICU-specific PMIE inventories should be paired with symptom and functional measures rather than treating a single scale as exposure, diagnosis, and outcome simultaneously. Third, intervention science should move to cluster-randomized, stepped-wedge, or hybrid effectiveness-implementation trials at ICU or hospital level, with moral injury as a primary outcome and implementation fidelity as a co-outcome. Fourth, analyses should be profession-specific and examine hierarchy, decisional responsibility, and speaking-up climate rather than assuming uniform risk. Fifth, workforce and patient data should be linked prospectively to determine whether moral injury predicts turnover, sickness absence, communication failures, safety events, family experience, or patient outcomes independently of burnout and staffing.

These studies are needed for more than academic completeness. Without them, the field risks misclassifying transient distress as injury, comparing prevalence estimates that are not measurement-equivalent, recommending resilience-only programs for structural harms, and asserting systems solutions that remain theoretically plausible but experimentally untested. The next scientific step is therefore not another broad cross-sectional prevalence survey; it is mechanism-sensitive longitudinal research followed by controlled organizational intervention trials.

CONCLUSIONS

Moral injury is a clinically and organizationally important but incompletely validated explanation for persistent moral suffering in intensive care. The strongest evidence shows heterogeneous prevalence across healthcare populations and moderate associations with PTSD, depression, anxiety, burnout, suicidal ideation, and occupational outcomes; it does not yet establish a precise ICU prevalence or a causal pathway

to patient harm. Theoretical models plausibly connect PMIE exposure to appraisals of agency, responsibility, betrayal, and failed repair within organizational contexts, but these pathways require prospective testing.

Moral injury should therefore neither be reduced to burnout nor used as an all-purpose label for ethical distress. Intensive care cannot eliminate tragedy, but it can reduce preventable moral hazards. Adequate staffing and supplies, transparent allocation, shared decision making, protected escalation, rapid ethics support, early voluntary assistance, and accountable organizational moral repair represent the most defensible multilevel response. The decisive next step is to test these strategies in rigorous ICU studies with moral injury, functioning, workforce retention, and patient- and family-relevant outcomes.

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