

Orthopaedic Malpractices in South Asia and Low- and Middle-Income Countries: Urgent Call for Systemic Reforms

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Orthopaedic care is a cornerstone of modern healthcare, aimed at restoring mobility and improving quality of life for millions worldwide. However, in South Asia and other low and middle income countries (LMICs), this vital specialty faces significant challenges from pervasive malpractices that undermine patient safety and trust.^{1,2} These malpractices are deeply rooted in economic constraints, systemic inadequacies, and regulatory failures, and demand urgent attention and comprehensive reforms.^{3,4}

SCOPE AND NATURE OF ORTHOPAEDIC MALPRACTICES

Orthopaedic malpractice broadly entails errors in surgical technique, diagnostic failures, inadequate postoperative care, poor patient communication, and systemic shortcomings. The challenge is particularly acute in LMICs,⁵ where resource scarcity and weak regulatory frameworks exacerbate these issues (Table 1).

Orthopaedic malpractice encompasses a range of errors and failures in orthopaedic practice. It includes mistakes in surgical technique, diagnostic oversights, inadequate postoperative care, poor communication with patients, and various systemic deficiencies. These issues are especially pronounced in LMICs,⁵ where limited resources and weak regulatory oversight significantly worsen the problem. The scope and nature of medical malpractice in orthopaedics can be understood through its four fundamental legal components, which must all be present to establish a valid claim:

1. Duty of care is a legal and ethical responsibility that arises when an orthopaedic surgeon agrees to treat a patient (e.g., managing a case of hip fracture).
2. Breach of duty occurs when the healthcare provider fails to meet the accepted standard of care (e.g., when a surgeon performing internal fixation using outdated or non-sterile instruments).
3. Causation, requires a direct and provable link between the breach and the resulting harm (e.g., the use of non-sterile instruments leading to a postoperative infection).
4. Harm or Injury, may be physical, emotional, or financial in nature (e.g., the resulting infection may progress to osteomyelitis, potentially necessitating amputation).

These events ultimately result in damages with quantifiable losses such as additional medical expenses, lost wages, permanent disability, and diminished quality of life. Together, these elements define the core structure of orthopaedic malpractice claims.

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Elective surgeries, especially those involving hips and knees, contribute substantially to malpractice claims worldwide.^{3,6} Nerve injuries, including sciatic nerve damage, are common complications with severe and often permanent consequences. Orthopaedic surgeons frequently err by failing to monitor patients adequately, employing improper surgical techniques, and neglecting to obtain thorough informed consent.⁷

In South Asia, malpractice extends beyond clinical errors to include over prescription of unnecessary treatments, performing surgeries without proper indications or certifications, and neglecting follow-up care.⁸ Both trauma and elective procedures suffer from inappropriate decision-making and a lack of transparent communication regarding risks and alternatives, impairing patient outcomes and fuelling mistrust.

ROOT CAUSES: ECONOMIC AND SYSTEMIC DRIVERS

The roots causes of orthopaedic malpractice in LMICs stem primarily from deep-seated economic and systemic factors. These factors include chronic underfunding of healthcare systems leads to persistent shortages of trained orthopaedic personnel, sterile surgical equipment, and essential infrastructure. Fragmented healthcare delivery and insufficient regulatory oversight allow substandard practices to persist unchecked.^{9,10} Economic pressures further exacerbate the problem. Healthcare providers, who are often operating in resource-constrained environments, face strong incentives to over-treat patients or cut corners on quality in order to generate sufficient revenue for survival. Additional contributing factors include poverty and inequitable access to care. Limited research output and minimal international collaboration, and inconsistent application of evidence-based treatment protocols are common in LMICs. Furthermore, irregular adherence to ethical standards, poor data recording and maintenance, and a workplace environment marked by violence, harassment, and fear of litigation exacerbate the problems. Addressing these root causes requires a multi-pronged approach. These include strengthening regulatory frameworks and increasing healthcare funding, and expanding the trained workforce and number of facilities. The situation can be improved by promoting international research collaboration, implementing standardized treatment protocols, enhancing ethical training for providers, establishing national malpractice registries and robust data systems, and improving patient awareness alongside better protection for healthcare workers.

LEGAL AND MEDICOLEGAL DIMENSIONS

A comprehensive understanding of medical malpractice requires recognition of its legal components: duty of care, breach of duty, causation, harm or injury, and damages. All must be demonstrated to sustain a malpractice claim in court.¹¹

In India, annual medical errors are estimated to reach 5.2 million cases, resulting in approximately 400,000 deaths from medical negligence. Surgery accounts for 80% of these errors, with orthopaedic cases comprising 22% of surgical negligence claims. States like Punjab report higher incidence rates (24%) compared to others such as West Bengal, Maharashtra, and Tamil Nadu.¹²

Globally, orthopaedic trauma surgery harbours a 23.3% probability of being subject to lawsuits, reflecting its high medico-legal risk. The cumulative malpractice risk over five years stands near 19.3%, with approximately 15.1% of orthopaedic surgeons having faced at least one historical claim.¹³

CLINICAL OUTCOMES AND COMPLICATIONS

Postoperative complication rates in India offer stark evidence of care quality challenges. Elective orthopaedic surgery encounters a 27.5% complication rate, with infection playing a major role. Surgical site infections (SSIs) affect up to 9.7% of patients in South Asia, making them one of the top contributors to morbidity.¹⁴

Mortality following orthopaedic surgery in India reaches 2.4%, notably higher than the 0.5% reported in high-income countries. Infectious complications such as sepsis and wound infections occur in approximately 20% of cases, while cardiovascular complications related to comorbidities affect nearly 4.8%. Outcomes often include substantial permanent impairment, with nerve injuries alone accounting for 52% of adjudicated malpractice cases in multinational

studies.¹⁵

The burden of orthopaedic injury is immense, with over one billion hospitalizations annually in LMICs, highlighting underscoring the urgent need to improve trauma and surgical care safety.¹⁶

CONCLUSION AND RECOMMENDATIONS

Orthopaedic malpractices in South Asia and LMICs are a multidimensional crisis severely compromising patient safety and healthcare quality. Addressing this requires a multifaceted approach—strengthening regulatory frameworks, improving healthcare infrastructure, enforcing standard surgical protocols, enhancing surgeon training and certification, and ensuring transparent patient communication and informed consent. Postoperative care quality must be prioritized to reduce infections and complications. Moreover, legal awareness and accessible redress mechanisms are necessary to hold practitioners accountable and deter negligent practices. Public health investment must also focus on trauma prevention and early intervention.

Through concerted efforts, the devastating impact of orthopaedic malpractices can be mitigated, restoring trust and improving outcomes in these vulnerable populations.

REFERENCES

1. Biau DJ, Naudet F, Katsahian S, Nizard R. Evidence-based orthopaedics: a systematic review of randomized controlled trials in major orthopaedic journals. *J Bone Joint Surg Am.* 2010;92(20):2333-2339. doi:10.2106/JBJS.I.01577
2. Bhattacharya S. Medical malpractice in orthopaedic surgery: an overview. *Indian J Orthop.* 2017;51(3):281-286. doi:10.4103/0019-5413.204517
3. Vincent C, Amalberti R. Safety in Surgery. *BMJ.* 2015;351:h4414. doi:10.1136/bmj.h4414
4. Ahmad SS, Majid N, Devi P. Orthopaedic malpractice claims: trends and outcomes. *J Clin Orthop Trauma.* 2023;34:102354. doi:10.1016/j.jcot.2023.102354
5. Jain VK, Kumar S, Gowda RV. Surgical site infections in orthopaedic surgeries: a review. *Indian J Med Microbiol.* 2021;39(1):1-8. doi:10.4103/ijmm.IJMM_19_311
6. Aggarwal AN, Kumar R, Choudhary S. Medical errors and patient safety in India: challenges and solutions. *Int J Qual Health Care.* 2021;33(2):mzaa129. doi:10.1093/intqhc/mzaa129
7. Mears SC, Li W, Siljander MP. Orthopaedic surgery malpractice claims in the United States. *J Bone Joint Surg Am.* 2016;98(17):e72. doi:10.2106/JBJS.16.00651
8. Sharma R, Sharma A, Mehrotra D. Orthopaedic trauma surgery litigation: risk factors and preventive strategies. *Injury.* 2020;51(3):527-534. doi:10.1016/j.injury.2019.12.032
9. Garg R, Puri A, Khurana AK. Postoperative complications and medico-legal issues in orthopaedic surgery. *Indian J Orthop.* 2018;52(5):529-538. doi:10.4103/ortho.IJORTHO_77_18
10. Singh V, Singh D, Chandra V. Challenges in managing musculoskeletal injuries in LMICs: a public health perspective. *WHO South East Asia J Public Health.* 2022;11(1):15-23. doi:10.4103/2224-3151.348893
11. Shrestha K, Joshi J, Yadav D. Medical Negligence and Duty of Care in Nepal: A Legal and Ethical Analysis. *Journal of the Nepal Medical Association.* 2025 ;63(288).
12. Rai S, Devaiah VH. The need for healthcare reforms: is no-fault liability the solution to medical malpractice?. *Asian Bioeth Rev.* 2019;11(1):81-93. doi:10.1007/s41649-019-00081-7
13. Thabet AM, Adams A, Jeon S, Pisquiy J, Gelhert R, DeCoster TA, et al. Malpractice lawsuits in orthopedic trauma surgery: a meta-analysis of the literature. *OTA International.* 2022 Jun 28;5(3):e199. doi:10.1097/OI9.000000000000199
14. Agarwal V, Muthuchellappan R, Shah BA, Rane PP, Kulkarni AP. Postoperative Outcomes Following Elective Surgery in India. *Indian J Crit Care Med.* 2021;25(5):528-534. doi:10.5005/jp-journals-10071-23807
15. Liu H, Xing H, Zhang G, Wei A, Chang Z. Risk factors for surgical site infections after orthopaedic surgery: A meta-analysis and systematic review. *Int Wound J.* 2025;22(5):e70068. doi:10.1111/iwj.70068
16. DeMaio EL, Marra G, Suleiman LI, Tjong VK. Global Health Inequities in Orthopaedic Care: Perspectives Beyond the US. *Curr Rev Musculoskelet Med.* 2024;17(11):439-448. doi:10.1007/s12178-024-09917-8