

Dental Malpractice: Risk Factors, Causative Trends, Damages Assessment and Strategies for Prevention

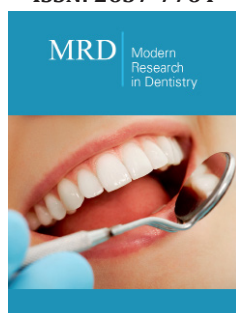
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Abstract

Introduction: Dental malpractice poses significant risks to patient safety and exposes practitioners to considerable legal and financial liability. This study provides a comprehensive analysis of dental malpractice claims, examining risk factors, causative trends, damage estimates and key preventive strategies. It represents the first investigation to quantitatively assess legal malpractice cases in dentistry, offering novel insights into the most frequently reported clinical errors and their underlying causes.

Materials and methods: Dental malpractice cases were identified using the Google Scholar case law database, applying targeted search criteria that included patient demographics, health status, type of dental facility, dental specialty, causes of malpractice and the nature of legal claims. The analysis focused on detecting patterns in malpractice allegations and determining the most cited legal grounds, providing a data-driven understanding of liability trends within dental practice.

Result: The results revealed that treatment failures were the leading cause of dental malpractice claims (56%), followed by medication-related issues (22%), diagnostic errors (15%) and communication failures (7%). Most cases involved otherwise healthy pediatric patients and occurred during diagnosis, treatment, or post-treatment care. Incidents of dental malpractice were most reported in hospitals, clinics and correctional facilities. Interestingly, a greater number of claims were filed against physicians and healthcare administrators than against dentists themselves. Among dental specialties, the highest frequency of malpractice claims was associated with surgical procedures, public health dentistry, and oral and maxillofacial surgery. The most frequently cited legal grounds for these claims included general malpractice, negligence, breach of contract, and wrongful death. The average compensation awarded in dental malpractice cases was approximately \$136,000, with the highest recorded award reaching \$261 million in a wrongful death case.

Conclusion: Dentists should maintain comprehensive malpractice liability insurance to ensure equitable compensation for patients in the event of injury, while also safeguarding themselves against the potentially severe financial consequences of legal action. Enhancing patient safety necessitates targeted efforts toward protecting vulnerable populations, particularly children, and improving the quality of dental care in hospital-based settings. The findings from this study suggest that approximately two-thirds of dental malpractice claims could be mitigated by increasing treatment success rates and ensuring prompt retreatment to minimize patient harm, pain and suffering. Nearly one-quarter of claims may be avoided through careful verification of prescribed medications, particularly about dosage accuracy and contraindications. Additionally, diagnostic errors account for roughly one in seven claims, emphasizing the need to strengthen diagnostic precision and clinical decision-making. Finally, one in twelve malpractice claims could potentially be prevented through improved communication and patient engagement, highlighting the pivotal role of clear, empathetic dialogue in building patient trust and promoting safe, effective care.

Keywords: Dentist; Dental; Malpractice; Negligence; Mistakes; Errors; Lawsuit; Failed; Risks; Damages

Introduction

“Do no harm,” is a principle rooted in the Hippocratic Oath [1], has been a cornerstone of medical and dental ethics for over 2,500 years, emphasizing the responsibility of healthcare

professionals to prioritize patient safety and ethical care [2]. This enduring standard obligates dentists to prevent harm and maintain the highest quality of care [3]. However, malpractice can occur when errors or omissions arise [4], or when dental treatment falls negligently below accepted professional standards [4], leading to patient injury [5]. Advancements in diagnostic and therapeutic techniques across medicine and dentistry have significantly elevated patient expectations, fostering a growing demand for flawless treatment outcomes [6]. As a result, healthcare professionals, including dentists, must uphold increasingly high standards of precision, attentiveness, and diligence, ensuring not only clinical excellence but also the safe execution of procedures [7]. Rising patient expectations for successful treatment, coupled with the disappointment and frustration that follow unsuccessful outcomes, have contributed to a sharp increase in dental malpractice claims worldwide [8]. To minimize the risk of patient harm, dentists have an ethical obligation to implement proactive preventive measures [9]. These include strict adherence to best practices, ongoing professional education, clear and thorough patient communication, and comprehensive risk management strategies. By prioritizing these safeguards, dentists can enhance patient safety, improve treatment outcomes, and reduce the likelihood of malpractice claims [10].

Dentists are dedicated to delivering the highest quality care to enhance their patients' health and well-being [9]. However, despite their expertise and commitment, achieving consistently perfect results remains an inherent challenge. Numerous factors contribute to this reality, including the complexity of procedures, individual patient-specific variables and biological or clinical limitations [11]. Even when a dental procedure is executed with technical perfection, its natural success rate may still be limited, sometimes as low as 39%, due to these uncontrollable factors [12]. Variations in patient anatomy, healing responses, underlying medical conditions, and unforeseen complications all influence treatment outcomes [13]. This underscores the necessity for "patient-centered care" to maintain realistic expectations and for practitioners to emphasize evidence-based approaches, continuous skill development, and transparent communication about potential risks and limitations [14]. Over the years, risk management in dentistry has evolved by emphasizing thorough documentation of treatments in dental records and ensuring patients are fully informed about proposed procedures before treatment begins. These practices enhance patient safety, support informed consent, and help mitigate legal and ethical risks [15]. Dental malpractice can be fatal [16]. Dental malpractice is a form of professional negligence where a dental professional fails to provide the appropriate standard of care, leading to harm, injury, or loss to the patient [17].

Anecdotal evidence suggests that dentists can commit a variety of mistakes such as: Providing incorrect dental procedures, injuries during root canal work, damage to oral nerves, failure to promptly diagnose oral cancer and disease, anesthetic errors, failure to timely treat infections, problems extracting teeth, anesthesia errors, in which the patient never wakes up, negligent

failure to supervise dental assistants, or failing to refer a patient to a specialist for treatment [16]. Medical and dental errors are estimated to contribute to the deaths of up to a hundred-thousand American patients annually [18]. Medication errors alone impact approximately seven million patients each year, leading to three and a half million doctor visits and one million emergency department visits each year [19]. The median error rate for incorrect drug administration stands at 14.6% [20], posing a significant risk of preventable adverse drug events, particularly among vulnerable populations such as children [20]. These statistics underscore the urgent need for enhanced safety protocols, stricter medication oversight, and improved clinical practices to reduce errors and protect patient well-being. A diagnostic error is defined as "the failure to (a) establish an accurate and timely explanation of the patient's health problem(s) or (b) communicate that explanation to the patient" [21]. Accurate and timely diagnosis is crucial to ensuring that appropriate treatment is initiated, ultimately optimizing patient outcomes [22]. Any breakdown in the diagnostic process can result in errors, leading to serious consequences [22]. Studies indicate that up to 23% of hospitalized patients experience a diagnostic error, with 17% of these errors causing adverse events that directly harm the patient [23]. Additionally, diagnostic errors contribute to the deaths of 6.6% of affected patients [23]. Given the increased risk of adverse events and wrongful death, diagnostic errors remain the leading cause of medical malpractice claims [24]. These statistics highlight the critical need for improved diagnostic protocols, enhanced clinical training, and robust communication strategies to reduce errors and improve patient safety.

Medication errors often involve administering the wrong medication or an incorrect dosage, potentially leading to severe health consequences such as toxic side effects, allergic reactions, therapeutic failure, permanent disability, and even death [25]. In an insurance liability dataset, errors in dispensing the wrong drug accounted for 36.8% of malpractice claims, while incorrect dosage errors comprised 15.3% of claims [26]. To reduce malpractice claims and enhance patient safety, it is crucial to minimize dispensing errors through continuous vigilance, improved prescribing and dispensing protocols, and ongoing advancements in medication error prevention strategies [27]. Dentists have a legal duty to minimize the risks to patients, by administering the correct medication in the proper dosage and to provide accurate instructions; a failure to meet these obligations can lead to successful claims of malpractice [28], negligence, neglect, strict liability, assault or battery, breach of contract, breach of warranty and wrongful death, allow patients, guardians, or relatives to recover financial damages resulting from these failures [29]. Legal frameworks are in place to hold dentists accountable for patient harm caused by professional misconduct [30], underscoring the importance of maintaining high ethical standards in dental practice [31].

Previous insights into dental malpractice claims have primarily been derived from insurance provider data [5,32], state disciplinary board reports [31], patient complaint surveys [8], public health

surveys [33], selected malpractice case reviews [33,34] and systematic reviews of clinical literature [20]. However, no prior studies have systematically analyzed legal cases alleging dental malpractice using the Google Scholar case law database to identify factors that increase malpractice risk. This study seeks to fill that gap by examining the proportions of key variables associated with increased malpractice risk. The goal is to provide actionable insights that can help dentists identify potential risks and causes, implement effective prevention and mitigation strategies, and ultimately improve patient safety and the overall quality of care.

Material and Methods

On March 24-26, 2025, a search was conducted on Google Scholar for the number of legal cases using the term “dental malpractice.” The dental malpractice search was then combined with additional search terms for other criteria, such as patient age, health status, pharmacy type, healthcare specialty, malpractice types, and the nature of legal claims etc. The raw data was then expressed as a proportion to identify the percentage risks for each of the individual criteria for pharmacy malpractice. The raw

numerical data for the numbers of the legal cases for pharmacy malpractice was then analyzed using Kruskal-Wallis X2 statistical tests [35] (JMP Statistical Discovery, Cary, NC, USA) at a significance level of $p < 0.05$, to determine if there were significant differences between the medians of the google search results for the reasons for dental malpractice. No institutional ethical review of this research was necessary, because it used publicly available data, which is exempt from the ethical review requirements [36].

Result

Patient age in dental malpractice legal cases

A substantial proportion of patients involved in dental malpractice cases were young and vulnerable. Children represented the largest group, accounting for 59% of cases, followed by adults at 23%, babies at 13%, and teenagers at 4%. In contrast, elderly patients comprised only 1% of the cases, a significantly lower proportion (χ^2 , $p < 0.05$). These findings, illustrated in Figure 1, highlight the heightened vulnerability of pediatric patients in dental care and the need for targeted safety measures for younger age groups.

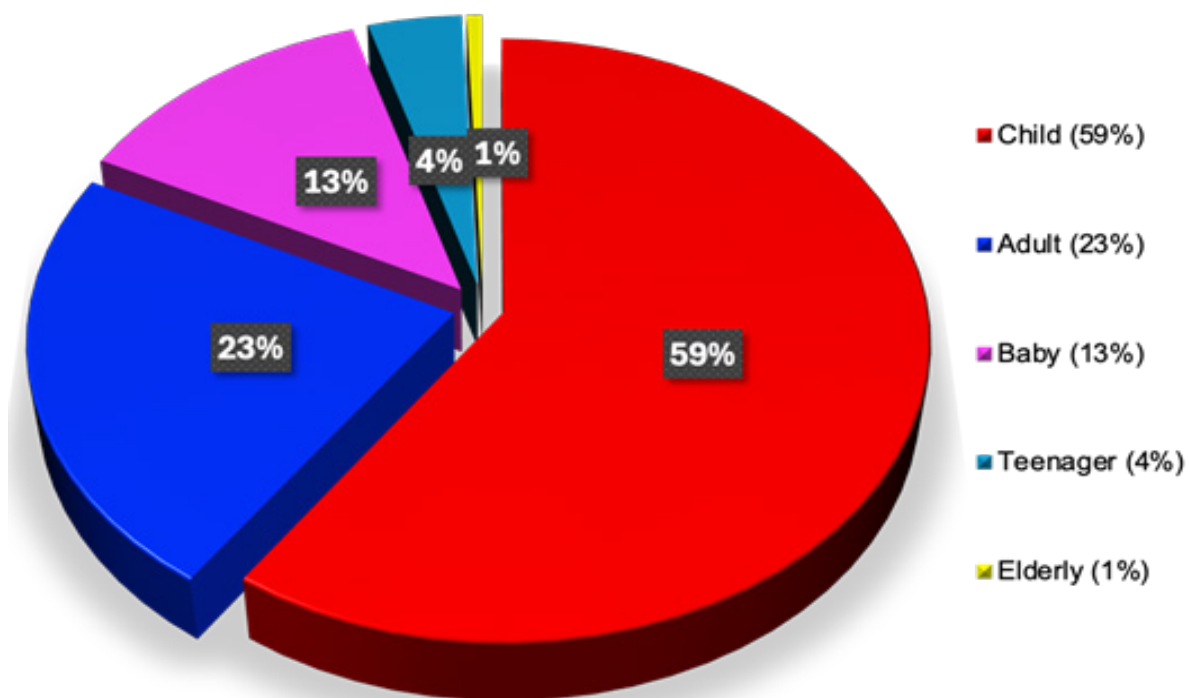


Figure 1: Pie chart of patient age in dental malpractice legal cases.

Patient health status in dental malpractice legal cases

Unexpectedly, most patients involved in dental malpractice cases reported being in good health, accounting for 59% of all claims. Fewer than one in five patients (17%) had disabilities. One in eight patients had a chronic condition (6%), or a compromised

health status (6%). Notably, a significant portion of cases (12%) involved patient deaths allegedly linked to malpractice (χ^2 , $p < 0.05$). These findings, presented in Figure 2, underscore that serious adverse outcomes can occur even in otherwise healthy individuals, highlighting the critical need for rigorous safety protocols regardless of a patient’s baseline health status.

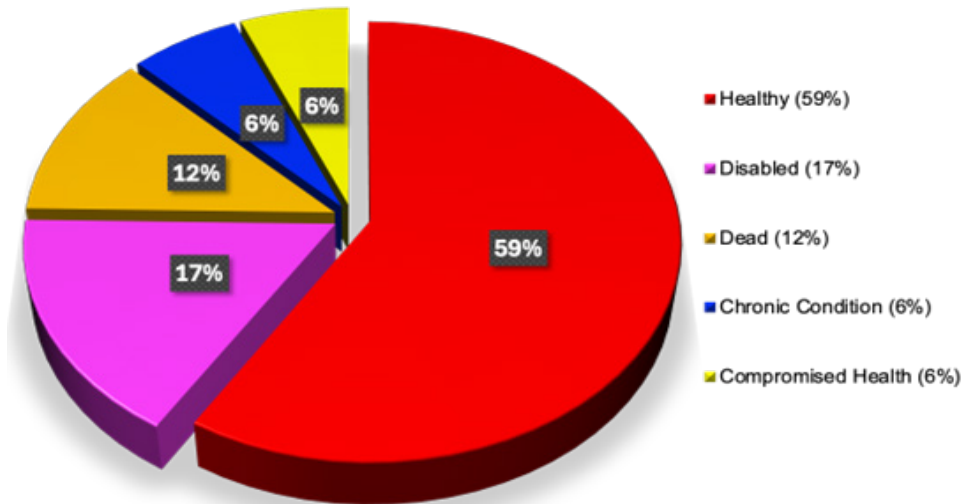


Figure 2: Pie chart of patient health status in dental malpractice legal cases.

Sex of patients in dental malpractice legal cases

Most dental malpractice claims (52%) involved female patients, a statistically significant finding (χ^2 , $p < 0.05$) that closely mirrors the gender distribution of the general population [37]. This alignment suggests that malpractice risk may not be disproportionately influenced by gender but rather reflects broader demographic trends in healthcare utilization.

Occurrence of dental malpractice during different phases of patient care

Most dental malpractice cases occurred during the core phases

of patient care: 35% during general care, 34% during treatment and 21% during the diagnostic stage. In contrast, significantly fewer claims were associated with the referral process (5%), emergency or accident-related care (4%) and outpatient or planned care settings (1%) (χ^2 , $p < 0.05$), as illustrated in Figure 3. These findings emphasize the heightened risk of malpractice during hands-on clinical care and underscore the importance of diligence throughout the diagnostic and treatment process.

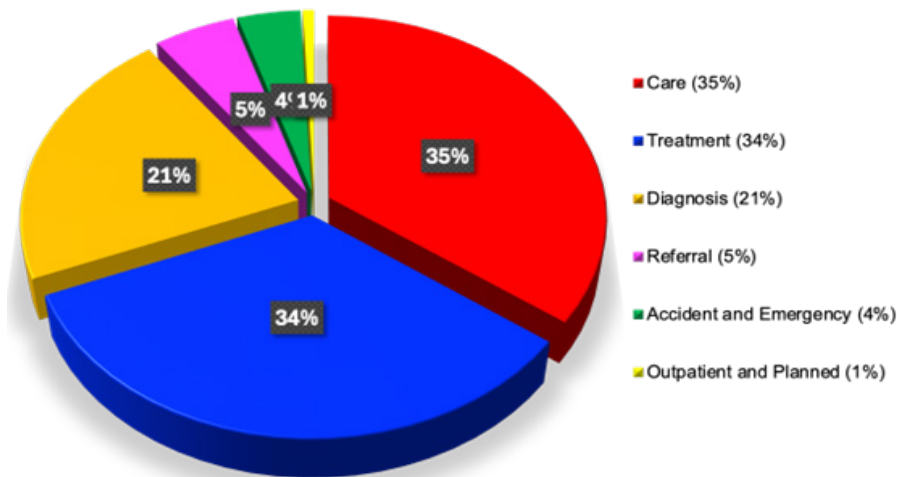


Figure 3: Pie chart of the occurrence of dental malpractice during different phases of patient care.

Dental malpractice across various facility types

Most dental malpractice cases occurred within hospitals (31%), followed by dental clinics (16%). Notably, a surprisingly high proportion of cases were reported in prisons (14%). Fewer malpractice claims were associated with emergency rooms (9%), nursing homes (9%), first aid settings (8%), rehabilitation centers

(7%), ships or vessels (2%), and ambulance or mobile clinics (2%). Malpractice cases were rare in operating theaters (<1%), helicopters (<1%), and nurseries (<1%) (χ^2 , $p < 0.05$), as shown in Figure 4. These findings highlight the significant risk of malpractice in hospital and prison settings, while also revealing less frequent incidents in other healthcare environments.

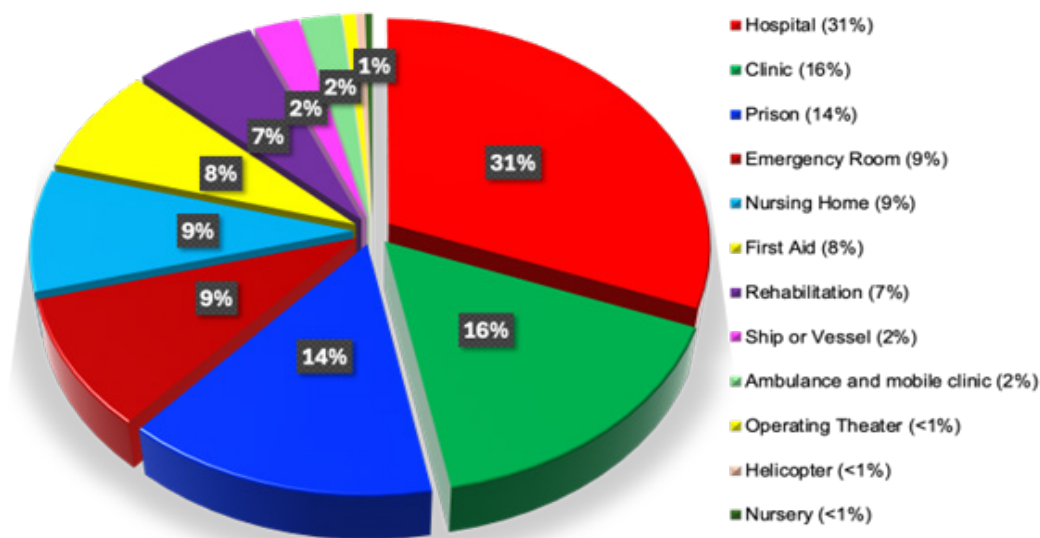


Figure 4: Pie chart of dental malpractice across various facility types.

Dental malpractice incidence across various dental specialty and employment positions

Most dental malpractice claims were directed at physicians (22%) and administrators (15%), while only 13% of claims were filed against dentists. Fewer claims were made against other healthcare professionals, including nurses (7%), care assistants (6%), specialists (5%), first aid providers (3%), nurse aides (3%), pharmacists (3%), professors (3%), radiologists (2%), hygienists (2%), technicians (2%), pathologists (2%), students and residents (2%), dieticians (<1%) and microbiologists (<1%) (χ^2 , $p < 0.05$), as shown in Figure 5. These findings highlight that dental malpractice claims are most frequently directed at physicians and administrators, with dentists facing a smaller proportion of claims despite their central role in patient care.

(3%), pharmacists (3%), professors (3%), radiologists (2%), hygienists (2%), technicians (2%), pathologists (2%), students and residents (2%), dieticians (<1%) and microbiologists (<1%) (χ^2 , $p < 0.05$), as shown in Figure 5. These findings highlight that dental malpractice claims are most frequently directed at physicians and administrators, with dentists facing a smaller proportion of claims despite their central role in patient care.

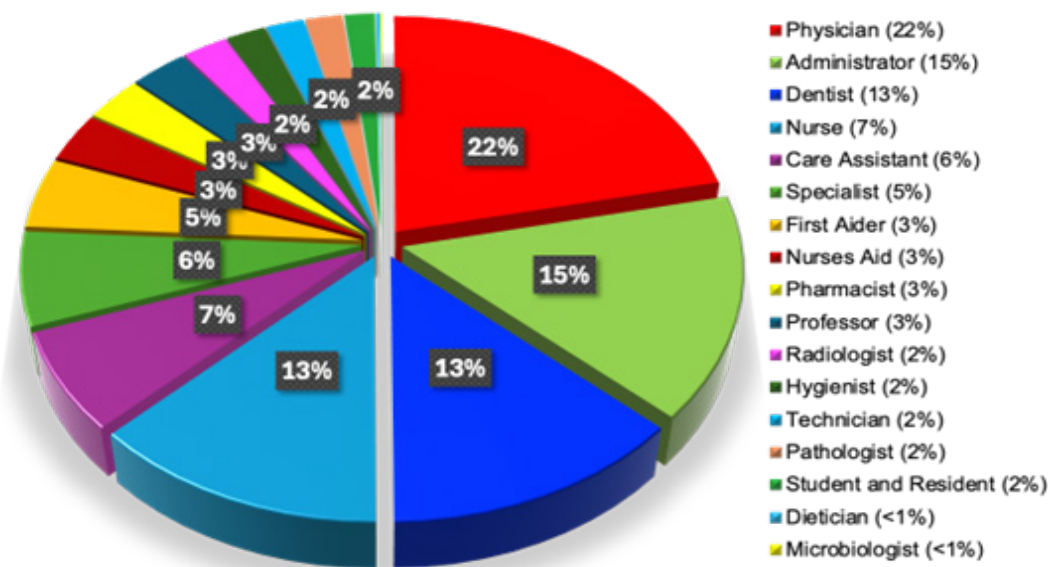


Figure 5: Pie chart of dental malpractice incidence across various dental specialty and employment positions.

Specialty areas of dental malpractice legal cases

The most common dental specialties involved in malpractice claims were surgery (24%), followed by public health (14%) and oral maxillofacial surgery (12%). Other specialty areas included

emergency dentistry (7%), psychology (6%), family dentistry (6%), tooth extraction (6%), cancer care (6%), anesthesia (5%), radiology (5%) and pathology (4%). Fewer claims were associated with implant dentistry (3%), allergy (3%), orthodontics (2%), pediatric dentistry (1%), cosmetic dentistry (1%), periodontics (1%) and

endodontics (1%). The least frequent claims occurred in geriatric dentistry (<1%) and prosthodontics (<1%) ($\chi^2, p<0.05$), as shown in Figure 6. These findings indicate that dental malpractice claims

are most prevalent in surgical and high-risk specialties, while less common in areas like pediatric, cosmetic and prosthodontics care.

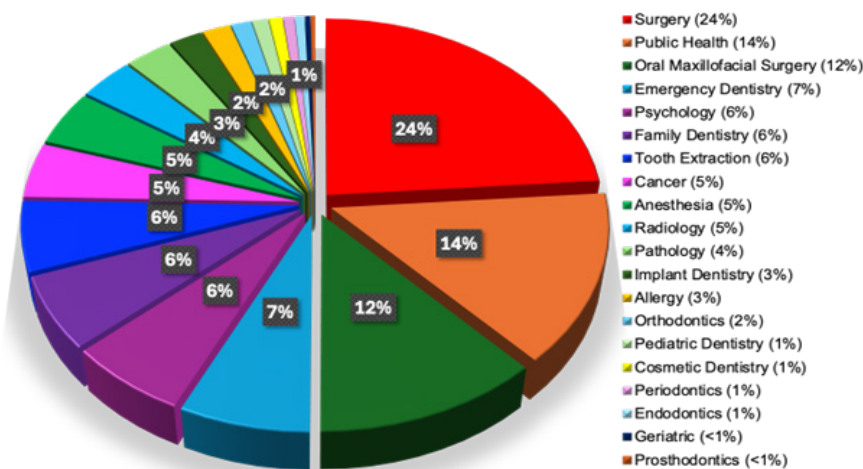


Figure 6: Pie chart of the specialty areas for dental malpractice legal cases..

Reasons for dental malpractice in legal cases

Treatment failures are the leading cause of dental malpractice claims, accounting for 66% of all cases. These include adverse reactions or complications (8%), failed surgeries (6%), pain and suffering (4%), death (4%), inadequate treatment (4%), inadequate care (4%), surgical errors (4%), infections (4%), accidents (4%), unnecessary surgeries (3%), side effects (3%), disability (3%), equipment failures (2%), tooth extractions (2%), fractures (2%), trauma (2%), burns (2%), pregnancy-related issues (1%), dental bridges (1%), trips and falls (1%), contamination (1%), dialysis-related issues (<1%), dentures (<1%), bruises (<1%), disfigurement (<1%), abscesses (<1%), amputations (<1%), lacerations (<1%), transplants (<1%), transfusions (<1%), dermatitis or rashes (<1%), necrosis or osteonecrosis (<1%), paresthesia (<1%), retainer or mouthguard issues (<1%), esthetic concerns (<1%), and needlestick injuries (<1%). Medication errors are the second

leading cause of malpractice claims, representing 22% of cases.

These include medication administration errors (9%), prescribing wrong medication (6%), general medication errors (5%), anesthesia mistakes (1%), drug interactions (<1%), overdose (<1%), and underdose (<1%). Diagnosis errors follow as the third leading cause, accounting for 15% of claims. These include diagnostic failure (6%), diagnostic errors (4%), delayed diagnoses (4%) and misdiagnosis (1%). Communication failures, such as consent problems and insufficient warnings, are the fourth leading cause, comprising 7% of claims. These include a lack of informed consent (4%), communication failures (3%) and warning failures (3%) ($\chi^2, p<0.05$), as shown in Figure 7. These findings underscore the need for improved clinical practices, better medication management, accurate diagnostic processes, and enhanced communication to reduce the incidence of malpractice claims.

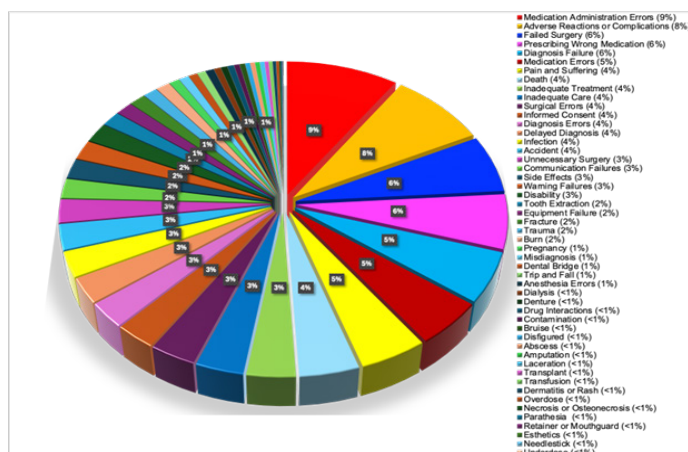


Figure 7: Pie chart of the reasons for dental malpractice in legal cases.

Dental malpractice and other legal claims

One third of the legal cases against dentists involved allegations of malpractice (32%). One quarter of legal causes are alleged negligence (27%) and breach of contract (9%). Less than one in ten of the cases involved product liability (7%), wrongful death (7%), strict liability (7%), product liability (6%), assault (4%), fraud or misrepresentation (3%), battery (3%) and privacy (2%) (χ^2 , $p < 0.05$), as shown in Figure 8. These findings highlight the most common legal issues faced by dentists, with malpractice and negligence being the predominant concerns, while other allegations such as fraud and privacy breaches were far less frequent.

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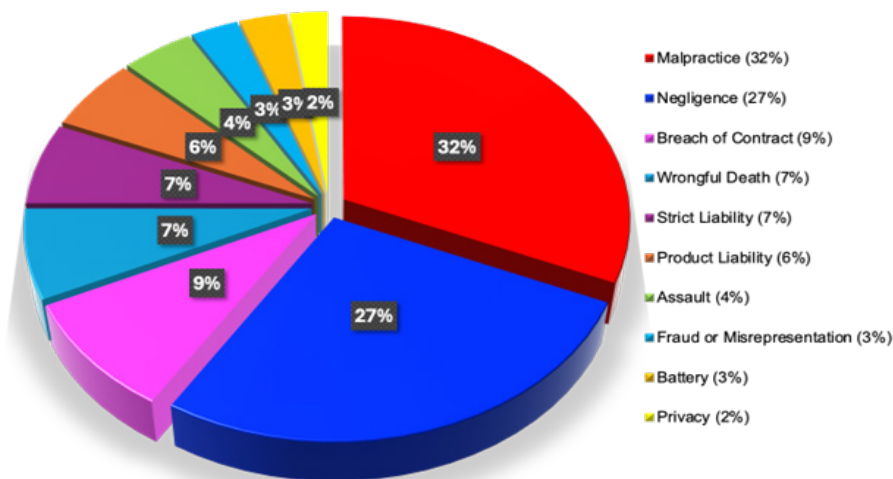


Figure 8: Pie chart of dental malpractice and other legal claims.

Monetary damage in dental malpractice cases

Dental malpractice settlements and court judgments typically aim to compensate patients and/or their families for medical harm and financial losses resulting from errors or negligence by a dentist, dental staff, or other dental healthcare providers. The monetary damages awarded are designed to cover various forms of patient suffering, including pain, disability and the costs associated with corrective treatments and ongoing medical care. According to published data [38-48], the number of monetary damages varies based on the severity of the malpractice injuries. The amount of malpractice damage can vary significantly, as injured patients, or

their guardians or relatives, may be entitled to recover not only direct costs such as dental expenses and medical bills, but also additional compensatory damages for disability, lost wages and diminished quality of life. In cases involving gross negligence or egregious malpractice, courts may also award punitive damages to address pain and suffering and to serve as a deterrent. These awards can range from thousands to several million dollars, depending on the severity of the harm and the circumstances of the case. The monetary damages awarded in dental malpractice cases, categorized by the severity of patient injuries, is shown in Table 1 [38-50].

Table 1: Monetary damage in dental malpractice cases.

Range of Monetary Damages	Severity of Malpractice Injuries	Patient Injuries and Damages Amounts
\$0 to \$30,000	Minimal injuries	\$1,500 to \$2,500 for loss of a tooth [38].
		\$4,500 to \$25,000 for fractured jaw and loss of teeth [38].
		\$7,000 for loss of front teeth [38].
		\$10,000 for superficial burn [39].
		\$24,000 for a periodontal abscess caused by defective bridge [40].
\$30,000 to \$136,000	Minor injuries	\$30,000 chemical burn to cheek [39].
		\$70,000 to \$85,000 for pain due to failed orthodontics [40].
		\$90,000 incorrect extraction of healthy tooth [39].
		\$96,250 failed molar tooth removal creating permanent lingual paraesthesia [40].
		\$100,000 for periodontal neglect [40].
Average \$136,000	Average injuries	The insurance average settlement amount for a dental malpractice claim was \$136,000 [42].

\$136,000 to \$1,000,000	Major injuries	<p>\$140,000 for numb tongue following wisdom tooth extraction [40].</p> <p>\$141,000 for eye puncture injury from braces removal [39].</p> <p>\$155,000 for improper mandible fracture repair [40].</p> <p>\$225,000 for root canal leaked hydrochloric acid which destroyed gum and bone [41].</p> <p>\$230,000 for failed orthognathic surgery [40].</p> <p>\$325,000 for failed crowns causing tooth decay [43].</p> <p>\$350,000 for failed root canals causing loss of teeth [44].</p> <p>\$350,419 for failure to remove tooth decay before cementing a bridge [41].</p> <p>\$434,000 failed wisdom tooth removal, fractured jaw [39].</p> <p>\$500,000 for failed wisdom tooth extraction causing nerve damage and persistent face numbness [45].</p> <p>\$765,000 child’s permanent teeth were mistakenly extracted [39].</p> <p>\$999,000 wrongful death by cardiac arrest under general anaesthesia for oral surgery [39].</p>
\$1,000,000 to \$11,000,000	Severe injuries	<p>\$1.2m for unnecessary extraction of all patients teeth and failed dental implants [46].</p> <p>\$1.4m for wrongful death for brain injury caused by general anaesthesia for periodontal surgery [39].</p> <p>\$2m for a failure to diagnose tongue cancer [39].</p> <p>\$2.96m for tooth extraction causing jaw osteonecrosis [40].</p> <p>\$2.9m for brain damage during dental surgery [47].</p> <p>\$3.9m for failed root canal that created trigeminal neuralgia [44].</p> <p>\$4.5m for failed endodontic root canal procedure that over-filled sealer destroying tissues [48].</p> <p>\$11m for failing to diagnose a cancerous sore on a tongue [49].</p>
\$11,000,000 to \$261,000,000	Wrongful death	\$261m maximum for wrongful death [50].

Discussion

This pioneering study is the first to utilize a comprehensive case law database to systematically identify the most and least frequent causes of dental malpractice [49]. By highlighting key dental practice factors associated with legal claims, the study addresses a critical gap in existing literature. These findings offer valuable insights for dental professionals, enabling the identification of high-risk areas and the implementation of targeted risk management strategies aimed at reducing malpractice claims and improving patient safety.

Fundamental dental malpractice issues

Most dental malpractice lawsuits arise from a dentist’s failure

to meet the accepted standard of care. Such failures can manifest in various forms, including procedural errors, misdiagnoses, and lapses in communication or documentation [38-50]. Errors occurring during dental procedures may result in significant harm, including injuries that adversely impact a patient’s quality of life. When these mistakes are preventable, they often form the legal basis for malpractice claims [51]. By addressing the key areas of malpractice identified in this study, dental professionals can mitigate the risks associated with clinical errors, omissions and negligence-ultimately enhancing patient safety and improving health outcomes. The primary categories of dental malpractice observed in this study, as well as those reported in the existing literature [5,8,20,31-33], are summarized in Table 2.

Table 2: Fundamental causes of dental malpractice.

Fundamental Cause	Understaffing Distractions, Technical Issues, & Fatigue	Inadequate Training & Skills, Lack of Competence	Inexperience in Providing the Type of Dental Treatment	Lack of Diligence to Prevent Mistakes	Focus on Maximizing Profits or Cutting Costs	Inadequate Facilities & Equipment
Examples	Rushed dental procedures can lead to poor-quality work, such as overlooking infected root canals.	Misdiagnosed or failed to detect conditions such as oral cancer, failed to intervene when treatment is failing.	Provided a failed dental procedure that should have been referred to a specialist.	Clerical mistakes, failure to record allergies, or extraction of the wrong tooth.	Provided unnecessary treatments, such as placing dental implants instead of preserving salvageable teeth.	Unsanitary dental instruments, can compromise patient safety.

Surgical errors	<p>Nerve damage during tooth extraction or surgery.</p> <p>Injury to adjacent teeth, gums, or bone.</p> <p>Improper use of anaesthesia, leading to injury or adverse reactions.</p> <p>Incomplete removal of an infected or necrotic tissue from teeth or roots.</p>
Medication errors	<p>Prescribed the wrong medication or dosage.</p> <p>Failed to account for drug interactions or allergies.</p> <p>Overprescribed painkillers or antibiotics.</p>
Anaesthesia errors	<p>Over- or under-sedation, due to incorrect dosage or type of aesthetic.</p> <p>Failed to properly monitor the patient during sedation.</p> <p>Allergic reactions or adverse effects resulting from improper use of anaesthesia.</p>
Prosthetic errors	Failed to disinfect periodontal tissues and patients suffer pain from bleeding periapical and gingival tissues.
Orthodontic errors	Failed to adequately monitor orthodontic progress, leading to tooth misalignment and damage.
Endodontic errors	Failed to adequately disinfect root canals, leaving an infected necrotic pulp which can create a painful periapical abscess.
Periodontic errors	Failed to disinfect oral tissues, leaving painful bleeding periapical and gingival (gum) tissues.
Implant errors	Failed to prevent and treat periimplantitis (implant infection), and /or failed to obtain implant osteointegration.
Cosmetic dentistry errors	<p>Failed veneers, bonding, or teeth whitening.</p> <p>Misalignment and injury to teeth due to cosmetic procedures.</p> <p>Failure to meet reasonable aesthetic expectations.</p>
Legal requirements for making a claim for damages	A strong legal case typically includes expert testimony from another dental professional confirming that the dentist's actions deviated from the standard of care.
	A pattern of complaints or prior lawsuits against the dentist can strengthen the case.
	To succeed, a legal claim must establish [28-31]:
	<p>Malpractice-Negligence, procedural errors, or intentional misconduct that deviates from the accepted standard of dental care.</p> <p>Negligence-Patient demonstrated that the dentist failed to meet the expected standard of care.</p> <p>Causation-Patient provided a direct link between the dentist's actions and the harm suffered.</p> <p>Damages-Patient has tangible losses, such as medical expenses, pain and suffering, or lost income.</p> <p>Battery-The dentist performed a procedure without the patient's informed consent.</p> <p>Fraud-The dentist deliberately misrepresented the necessity of a treatment for financial gain.</p> <p>Breach of Contract-The dentist failed to perform the agreed-upon procedure.</p>

Dental malpractice damage

This study found that the average dental malpractice claim amounted to \$136,000 [42], with damages ranging from zero in unsuccessful claims [52] to a maximum of \$261 million in cases involving wrongful death [50]. Notably, this average is consistent with a previously reported mean malpractice settlement payment of \$130,824 from a survey of oral and maxillofacial surgeons conducted five years ago [53]. However, when malpractice claims proceeded to trial and were resolved by court verdict, the mean

award increased significantly to \$247,555 [53]. This suggests that resolving claims through settlement may be a more cost-effective approach for dental professionals, as litigation can substantially increase financial liability-potentially doubling the cost of resolution [53]. In general, malpractice damages are assessed based on the severity of the injuries sustained [38-60]. The data revealed distinct categories of injury severity; minimal, minor, major, severe and wrongful death, which are expected to follow a standard distribution [61], as illustrated in Figure 9.

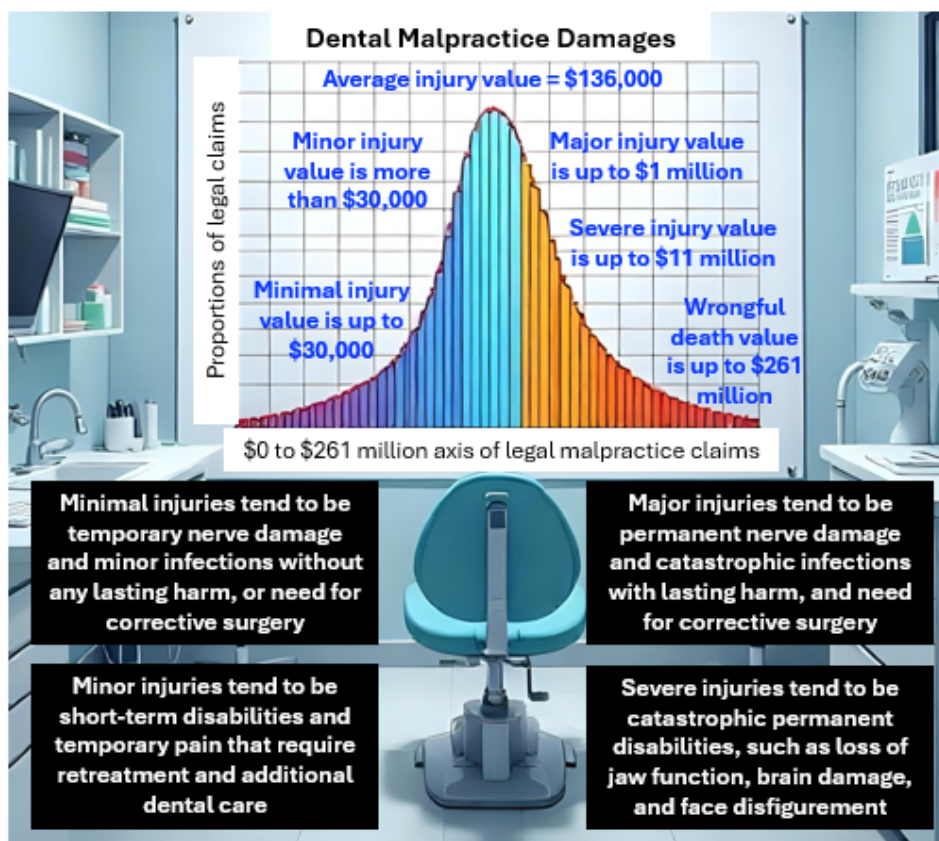


Figure 9: Standard distribution illustrating the calculation of dental malpractice damages.

Dentists' liability in dental malpractice and the likelihood of legal outcomes

A study conducted over fifty years ago reported that damages were awarded in only 7% of dental malpractice claims [54]. More recent anecdotal evidence from legal professionals suggests that up to 80% of malpractice claims can be resolved without any payment to the patient [55]. However, recent data indicate that the landscape is shifting. For example, a study of endodontists found that damages were awarded in 45% of malpractice cases [56], with 72% of those cases considered legally justified [57]. Similarly, a study in Japan reported that dentists were found legally liable in 64% of malpractice claims [58]. In the broader context of medical malpractice, the probability of a successful claim, even with strong evidence of negligence, is approximately 50% [59]. The outcome of a malpractice lawsuit is influenced by several key factors, including the strength and clarity of the evidence, the credibility of expert testimony, and the skill and experience of legal counsel representing the claimant [60]. The duration of dental negligence claims varies considerably, typically ranging from several months to multiple years [39]. Factors such as case complexity, the involvement of expert witnesses, and whether the case proceeds to trial or is settled out of court play a significant role in determining the timeline. Settlements tend to be resolved more quickly, while litigation can significantly prolong the process [39].

A recent survey of orthodontists found that 9.1% had been named in at least one dental malpractice claim, most commonly due to allegations of negligence [62]. Overall, the annual risk of a civil malpractice case being filed against a dentist is approximately 1.6%, and over the course of a career, a dentist may face three to five such claims on average [63]. In comparison, 7.4% of physicians are involved in malpractice litigation annually, and up to 99% of physicians have defended against at least one malpractice claim by the age of 65 [64]. Notably, due to the persistent threat of malpractice liability, 93% of physicians in high-risk specialties report engaging in defensive medicine practices [65]. Given these trends, it is reasonable for dentists to anticipate facing multiple malpractice claims throughout their careers. Statistically, the likelihood of being found liable is close to 50% when the supporting evidence is strong; however, the probability decreases when claims are poorly substantiated. Nevertheless, there is a growing trend of dentists being named in malpractice lawsuits, with an increasing likelihood of being held liable. This trend reflects greater public awareness, evolving legal standards, and heightened scrutiny of dental care practices. In response, it is essential for dental professionals to adopt comprehensive risk management strategies and maintain appropriate malpractice liability insurance coverage. By understanding the primary causes and risk factors associated with malpractice, such as diagnostic errors, miscommunication, medication-related mistakes, and negligent treatment failures,

dentists can take proactive steps to minimize legal exposure and enhance patient safety.

Most significant dental malpractice variables

This study demonstrates that approximately two-thirds of dental malpractice risks could be mitigated by improving treatment success rates and ensuring timely retreatment to reduce patient harm, pain, and suffering associated with failed procedures. Nearly one-quarter of malpractice claims could be prevented through rigorous verification of prescribed medications, particularly in terms of accuracy in drug selection and dosage. Furthermore, one in seven claims originates from diagnostic errors, emphasizing the importance of enhancing diagnostic accuracy and clinical decision-making. Lastly, one in twelve claims could be avoided by improving communication and patient engagement, highlighting the pivotal role of clear, empathetic, and informed dialogue in dental care. Within the broader categories of treatment failures, medication errors, diagnostic inaccuracies, and communication breakdowns, this study identified 143 distinct dental malpractice variables through nine analytical frameworks (Figures 1-8) (Table

1). These findings underscore the unequal influence of specific errors on malpractice risk, revealing that certain types of failures disproportionately increase the likelihood of legal action.

Preventing these outcomes requires close collaboration among dental professionals, physicians and healthcare administrators. Dental errors are largely preventable and universally unacceptable; therefore, addressing them effectively demands a proactive, multidisciplinary risk management approach. The analysis also revealed that malpractice allegations were more frequently filed on behalf of children than adults or elderly patients. Interestingly, most claimants were otherwise healthy individuals, rather than patients with chronic conditions, disabilities, or compromised health. Most allegations stemmed from incidents occurring during dental diagnosis or treatment, rather than from accidents or scheduled outpatient procedures. The most cited specialties in malpractice claims included surgery, public health dentistry, oral and maxillofacial surgery and emergency dentistry. Frequently alleged issues involved medication administration errors, adverse drug reactions, failed surgical procedures, pain and suffering, inadequate treatment, misdiagnosis, and delayed diagnosis.

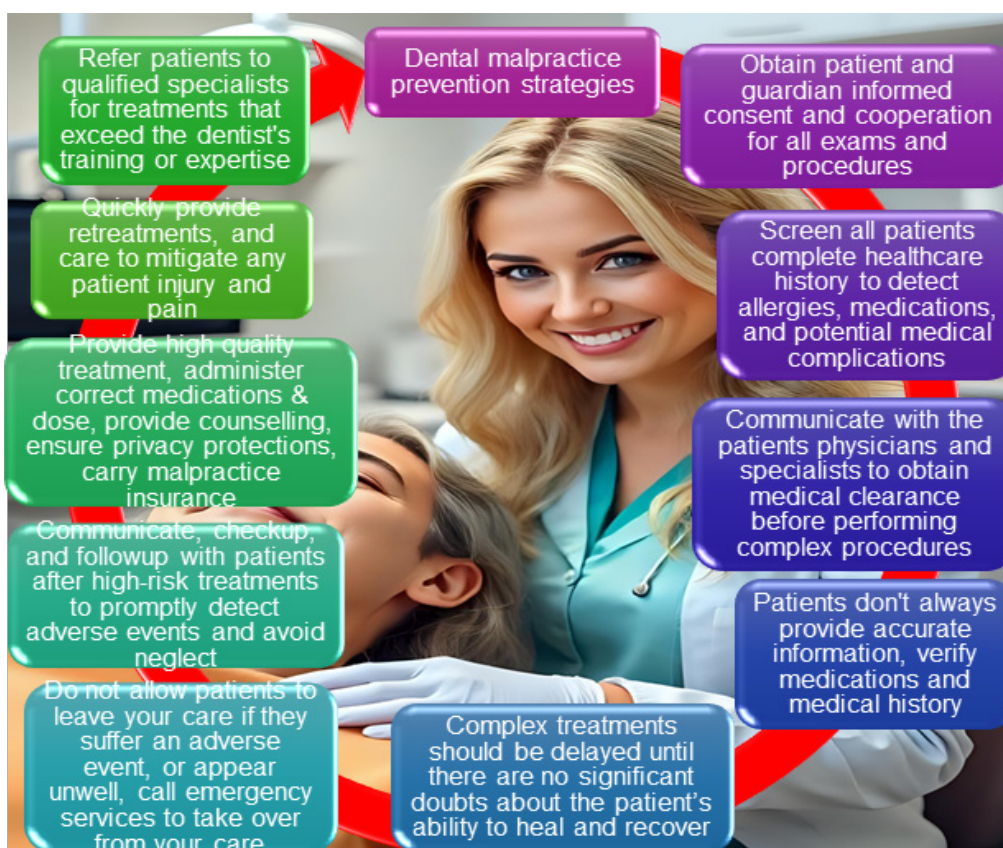


Figure 10: Pie chart of the reasons for dental malpractice in legal cases.

Dental malpractice prevention strategies

Enhancing patient safety and reducing the risk of dental malpractice requires sustained attention to several critical practices. First, obtaining informed consent and patient cooperation for all examinations and procedures is essential. Comprehensive

medical history screening should be conducted to identify allergies, current medications, and potential health complications, while communication with the patient’s primary healthcare provider is important for managing coexisting medical conditions. Verifying the accuracy of patient-reported information-such as

prescribed medications and medical records-further supports safe and informed clinical decision-making. Complex or elective procedures should be deferred when a patient's health status is compromised or when recovery is uncertain. In the event of an adverse reaction or medical emergency, emergency services should be contacted immediately to assume appropriate care. Consistent communication, routine checkups, and timely follow-ups are also critical for the early detection of complications and the prevention of treatment neglect. To further minimize malpractice risk, dental practitioners must provide high-quality, evidence-based care; ensure accurate medication prescribing, including appropriate dosages; deliver thorough patient counseling; and maintain active malpractice liability insurance. Timely retreatment or corrective care should be provided when necessary to mitigate patient injury or discomfort. Additionally, dentists should refer patients to appropriate specialists when a procedure exceeds their training or scope of practice. A summary of the dental malpractice prevention strategies identified in this study is provided in Figure 10.

Patient ages in dental malpractice legal cases

Most of the general population consists of adults, who are also the primary consumers of medications due to the higher prevalence of chronic conditions, age-related health concerns, and broader medical care needs [66]. Consequently, it would be reasonable to expect that most pharmacy-related malpractice cases would involve adult patients, given their extensive engagement with healthcare services and medication use [67].

However, the data from this study reveals a surprising and concerning trend: Most patients involved in dental malpractice cases were young and vulnerable individuals, including children (59%), infants (13%), and teenagers (4%). This finding raises serious concerns, as these populations are particularly susceptible to the consequences of medication errors [68]. Children, infants, and adolescents have unique physiological and developmental characteristics that increase their risk of harm from medication-related mistakes-such as dosage miscalculations, the use of inappropriate drug formulations, or the administration of contraindicated medications [69]. These vulnerabilities underscore the critical importance of age-specific safeguards and heightened vigilance in pediatric dental care.

Moreover, although adults and elderly individuals account for most of the overall medication consumption [70], they comprised only a minority (23%) of patients involved in dental malpractice cases. While older adults are often at increased risk for adverse drug events due to polypharmacy and age-related physiological changes affecting drug metabolism [71], they appear to be underrepresented in dental malpractice litigation. This discrepancy suggests that younger populations, particularly children and adolescents, may require more focused preventive interventions. The high proportion of malpractice lawsuits involving young patients; including children, babies and teenagers, is likely attributable to harm resulting from negligent dental care. Many of these cases occur when young patients are treated by general or family dentists rather than pediatric specialists. In such situations, the dentist

may fail to provide age-appropriate diagnoses, care, or treatment, leading to complications and injury. In some instances, necessary treatment may be omitted altogether, resulting in neglect, pain, and suffering. Furthermore, the data may be skewed. In malpractice cases involving adults, the patient's age is often unspecified, while cases involving minors are more likely to clearly indicate the patient's age or status as a child. Consequently, many adult cases may have been excluded from the dataset, artificially inflating the apparent proportion of claims involving young patients.

This discrepancy is underscored by the contrast between the 59% of malpractice claims involving children and the mere 1% involving pediatric dentists. This suggests that most young patients bringing malpractice claims were treated by general dentists rather than pediatric specialists. In many cases, these general dentists may have operated beyond their scope of training by failing to consult or refer to pediatric experts, resulting in substandard care and treatment failures. The relatively high failure rate of dental treatments among children, infants, and teenagers is particularly concerning, as early complications can result in long-term, disabling consequences. These may include persistent oral health issues such as missing teeth, structural damage, or compromised oral tissues extending into adulthood [72]. Despite the unique anatomical and developmental characteristics of younger patients, such as mixed dentition and ongoing tissue development, the importance of age-appropriate, pediatric-specific dental care is often overlooked [73]. These findings underscore the need to prioritize vulnerable populations, especially children, infants and teenagers, in the development and implementation of dental malpractice prevention strategies. Tailoring care to the specific needs of these groups is essential for reducing risk, improving outcomes and safeguarding long-term oral health.

Patient health status in dental malpractice legal cases

The relationship between patient health status and the risk of medical malpractice has historically been ambiguous [74]. This is due, in part, to the variability introduced by factors such as the condition of diseased teeth and dental tissues, the complexity of required procedures and the unpredictable nature of individual healing responses [75]. While it may seem intuitive that patients with disabilities, chronic illnesses, or compromised health would be at greater risk of dental malpractice, owing to their complex medical needs, polypharmacy and reduced healing capacity, the actual relationship between patient health status and the likelihood of adverse outcomes is not entirely linear or well-defined [76]. Unexpectedly, the data from this study revealed that a majority (59%) of patients involved in dental malpractice cases were reportedly in good health, challenging the assumption that those with pre-existing health conditions are inherently more vulnerable to dental errors [77]. In contrast, fewer than one in five patients were identified as having disabilities (17%), chronic conditions (6%), or compromised health (6%). These findings suggest that healthy individuals represent a substantial proportion of those affected by dental malpractice. This highlights a critical insight: dentistry-related errors are not confined to medically complex or high-risk populations but can significantly impact otherwise healthy

patients. Healthy individuals appear to be equally susceptible to treatment failures, medication errors, diagnostic inaccuracies, and communication breakdowns.

Alarming, one in eight malpractice cases (12%) involved the death of a patient. This is particularly concerning given that many of these patients were reportedly healthy prior to receiving dental care. Such outcomes underscore the potentially fatal consequences of procedural or medication-related errors, even among individuals without underlying medical conditions. These findings call for heightened vigilance in the treatment of all patients, not only those with evident vulnerabilities. Therefore, dental malpractice prevention strategies should not be narrowly focused on patients with known health conditions or disabilities. Instead, a comprehensive, patient-centered approach is essential, one that addresses risks across the full spectrum of patient health. By prioritizing treatment effectiveness, preventing diagnostic and medication errors, and promoting clear, consistent communication, dental professionals can reduce malpractice risk and enhance patient safety regardless of baseline health status.

Sex of patients in dental malpractice legal cases

Females constitute most of the general population and are expected to be primary consumers of dental services, in part due to their longer life expectancy [60] and a greater propensity to seek medical care, particularly for chronic conditions that require ongoing medication management [78]. Based on these trends, it might be assumed that female patients would be more frequently involved in dental malpractice claims. However, the relationship between patient sex and the frequency of dental malpractice remains inconclusive, as multiple variables, such as the type and complexity of dental procedures, the nature of prescribed medications, and systemic issues within healthcare delivery, can influence malpractice risk across all demographics. Data from this study revealed that females accounted for 52% of pharmacy-related dental malpractice claims, a proportion that closely mirrors the general female-to-male population ratio [60]. This suggests that dental malpractice claims are relatively evenly distributed between genders, with no pronounced disparity based on sex. The absence of gender skew in the data indicates that malpractice incidents likely stem from systemic factors, such as treatment failures, medication errors, poor communication and insufficient procedural oversight, that affect male and female patients at comparable rates. As such, strategies to reduce the incidence of dental malpractice should focus on addressing universal challenges within dental practice rather than targeting interventions based on demographic characteristics alone. Improvements in treatment efficacy, medication safety, and patient-provider communication are likely to benefit all patients, regardless of sex, thereby enhancing overall patient outcomes and reducing the likelihood of legal claims.

Dental malpractice occurrence during different phases of professional care

The correlation between specific phases of professional care and the incidence of dental malpractice has historically been

unclear, due in part to limited data directly linking stages of patient care to increased malpractice risk [79]. However, the findings from this study reveal notable trends in how malpractice cases are distributed across various phases of dental care. According to the results, most malpractice claims occurred during the care phase (35%), followed closely by the treatment phase (34%) and the diagnosis phase (21%). These three stages; each involving direct patient interaction, clinical decision-making, medication administration, or surgical procedures, represent critical points in the dental care continuum where errors are more likely to occur. The care phase is especially vulnerable, as it encompasses activities such as assessing patient needs, managing medication regimens, counseling on treatment options and monitoring post-treatment healing [80]. Errors during this phase may include improper or defective care, incorrect medication administration, inadequate patient education, or failure to identify adverse outcomes. These lapses can lead to significant patient harm and form the basis for legal action. For example, failing to recognize nerve damage or persistent numbness following a tooth extraction [41], or neglecting to adequately inform patients of warning signs related to treatment failure [80], may result in complications that escalate into malpractice claims.

The treatment phase: involving the execution of dental procedures and the ongoing administration of medications, also presents substantial risks. Dentists are expected to monitor post-operative healing, identify signs of failure and provide timely retreatment when necessary to minimize injury, pain and suffering [81]. This stage often includes patients in a vulnerable state, making careful management and timely intervention crucial for preventing malpractice. The diagnosis phase (21%) also plays a pivotal role in malpractice prevention. Errors in this phase may arise from misinterpretation of diagnostic information, failure to account for relevant health conditions, or selection of inappropriate treatment or medications [82]. Such errors can have significant consequences; for instance, prescribing the wrong drug or extracting the wrong tooth due to misdiagnosis or insufficient review of patient records [83]. Fewer malpractice cases were associated with the referral phase (5%), emergency/accident phase (4%), and outpatient or planned care phase (1%). While these stages still carry some risk, their lower incidence in the dataset suggests that most dental malpractice incidents originate in the earlier, more intensive stages of care, treatment and diagnosis. These findings indicate that targeted prevention efforts focused on the care, treatment and diagnosis phases have the greatest potential to reduce malpractice claims. Emphasizing improved post-operative monitoring, accurate medication administration, comprehensive patient education and evidence-based treatment planning can significantly enhance patient safety and reduce legal exposure for dental professionals.

Dental malpractice across different types of facilities

The influence of dental facility types on malpractice claim rates remains somewhat unclear, largely due to a lack of definitive data directly linking specific care settings to increased or decreased malpractice risk. This ambiguity is likely due to the consistent

presence of human factors, such as clinical decision-making, communication breakdowns and procedural errors; that contribute to malpractice across all settings [84]. Nevertheless, the available data from this study reveal several notable trends that can inform targeted strategies for risk reduction. The highest proportion of dental malpractice cases occurred in hospitals (31%), followed by clinics (16%), prisons (14%), emergency rooms (9%) and nursing homes (9%). These findings suggest that malpractice risks may be elevated in facilities where access to trained dental professionals is limited. In such environments, healthcare providers-including physicians, nurses and support staff-may attempt to address dental issues despite lacking the specific training and qualifications required for safe dental treatment, thereby increasing the likelihood of errors and adverse outcomes. Hospitals, clinics, prisons, emergency rooms and nursing homes are often high-pressure environments characterized by high patient volumes, limited resources and constrained access to specialized dental care [85]. These factors can contribute to rushed assessments, inadequate diagnostics, substandard treatment, and communication failures; all of which increase the risk of malpractice. For example, one study found that 33% of dental problems are managed inappropriately in hospital emergency rooms, largely due to the lack of integration of dentists into hospital care teams [86].

Similarly, oral health neglect is prevalent among nursing home residents, with many experiencing untreated pain, infection and dental deterioration due to a lack of routine care [87]. These conditions significantly heighten the risks of diagnostic failure, treatment error, and malpractice claims. Other facility types: including first aid stations (8%), rehabilitation centers (7%), ships or vessels (2%), ambulance and mobile clinics (2%), and less common locations such as operating theaters, helicopters, and nurseries (<1%), also carry malpractice risks. These settings often require rapid dental decision-making under resource-constrained or unconventional circumstances, which can increase the likelihood of diagnostic errors, treatment complications, and medication mistakes. Overall, the findings suggest that dental malpractice risks are particularly high in hospitals, clinics, correctional institutions, emergency departments and long-term care facilities. To mitigate these risks, it is essential to implement enhanced safety protocols, integrate trained dental professionals into broader care teams and strengthen quality control measures within these environments. Such interventions can improve the standard of dental care delivery, reduce the likelihood of adverse events, and ultimately decrease the incidence of malpractice claims.

Dental malpractice across various employment positions

Most dental malpractice claims are filed against physicians (22%) and administrators (15%), while only 13% of claims are directed specifically at dentists. Despite their central role in providing dental healthcare, dentists are not the most frequently named professionals in malpractice and negligence cases [64]. This discrepancy may stem from several factors, including the perception that overall patient care responsibilities lie primarily with physicians or administrative personnel. Additionally, healthcare systems often

promote a culture of defensive medicine, wherein blame is diffused among multiple stakeholders [20,65,72]. Nonetheless, it remains essential for dentists to recognize their critical role in preventing treatment failures, diagnostic errors, medication mistakes, and in providing thorough patient counseling-all of which contribute significantly to reducing the risk of malpractice claims. Fewer claims were made against other healthcare professionals, including nurses (7%), care assistants (6%), specialists (6%), first aid providers (3%), nurse aides (3%), pharmacists (3%), professors (3%), radiologists (2%), dental hygienists (2%), technicians (2%), pathologists (2%), students and residents (2%), and dietitians and microbiologists (<1%).

Although the frequency of claims among these groups is lower, the presence of such claims underscores the need for improved patient safety practices and professional accountability across all levels of care. For instance, claims against nurses and first responders often involve procedural errors or misdiagnoses, while those against residents or trainees highlight the importance of adequate supervision, training, and continuous professional development [74]. These findings emphasize that while dentists face fewer malpractice claims compared to physicians and administrators, they remain integral to patient outcomes and risk prevention. Ensuring safe, effective care requires a coordinated, multidisciplinary approach. Therefore, targeted interventions that foster interprofessional collaboration, enhance care quality, and promote clear communication between dental professionals and other healthcare providers are essential to minimizing errors and reducing the incidence of malpractice claims.

Reasons for dental malpractice legal cases

Treatment failures were identified as the leading cause of dental malpractice claims, accounting for two-thirds (66%) of all cases. These claims encompassed a wide range of adverse outcomes, including complications or adverse reactions (8%), failed surgeries (6%), pain and suffering (4%), death (4%), inadequate treatment and inadequate care (each 4%) and surgical errors (4%). Additional claims involved infections, accidents, unnecessary procedures, medication side effects, disabilities, and various forms of physical harm, such as fractures, burns, traumas and equipment failures. Less frequent but still noteworthy were issues related to dental prosthetics, patient safety incidents (e.g., trips and falls, contamination) and rare complications such as necrosis, amputations and paresthesia. The high prevalence of treatment-related claims may be attributed to the inherent biological and technical complexity of dental procedures, particularly those involving diseased or structurally compromised oral tissues [88]. These challenges are further complicated by the need for individualized treatment planning, precise execution of procedures, and careful management of patient-specific risk factors. Additionally, patients often hold high expectations for successful, complication-free outcomes [89]. When these expectations are not met, due to clinical error, unforeseen complications, or inadequate communication, the likelihood of malpractice claims increases. This highlights the critical importance of clinical vigilance,

comprehensive treatment planning and obtaining informed consent to mitigate legal risk.

Medication errors were the second most common cause of dental malpractice claims, accounting for nearly one-quarter (22%) of all cases. These included medication administration errors (9%), prescribing the wrong medication (6%), general medication-related mistakes (5%), anesthesia-related errors (1%), drug interactions (<1%), overdoses (<1%), and underdoses (<1%). Contributing factors often involved incorrect prescriptions, such as wrong drug selection, dosage, or frequency, as well as failure to adequately review patient allergies, drug contraindications and medication histories. Errors in medication documentation also played a role in these claims. Diagnostic errors were the third leading cause of dental malpractice claims, representing 15% of all cases. These included diagnostic failures (6%), general diagnostic errors (4%), delayed diagnoses (4%) and misdiagnoses (1%). Such errors can lead to inappropriate or missed treatments, prolonged patient discomfort, disease progression, or unnecessary interventions, all of which increase the risk of litigation. The underlying factors contributing to diagnostic errors may include insufficient clinical skills, limited experience, inadequate training or supervision, and failures in interpreting diagnostic imaging and patient records [23,75,82]. Notably, failure to detect early signs of serious conditions, including malignancies, can result in severe consequences for patient health and elevate legal exposure.

Communication failures accounted for 7% of dental malpractice claims, making them the fourth most common category. These claims often arose from breakdowns in the exchange of critical information between providers and patients. A substantial portion involved the lack of informed consent (4%), where patients were not adequately informed about the nature, risks, benefits, or alternatives of a proposed treatment. Additional claims included general communication failures (3%), such as unclear instructions, miscommunication regarding procedures or post-operative care and failure to address patient concerns. Warning failures (3%), in which patients were not properly informed of potential complications or side effects, also contributed to legal action. Such lapses can lead to misunderstandings, unmet expectations, and ultimately, patient harm. Collectively, these findings emphasize the need for systemic improvements in dental care delivery. Enhanced clinical practices, better medication management, improved diagnostic accuracy, and effective, empathetic communication are essential to reducing malpractice risk. By addressing these critical areas, dental professionals can strengthen patient safety, enhance treatment outcomes and reduce the incidence of legal claims.

Dental malpractice and other legal claims

Approximately one-third of legal cases brought against dentists involved allegations of malpractice (32%), followed by claims of negligence (27%) and breach of contract (9%). Less common were cases involving product liability (7%), wrongful death (7%), strict liability (7%), assault (4%), fraud or misrepresentation (3%), battery (3%) and privacy violations (2%). These findings

underscore the primary legal risks faced by dental professionals, with malpractice and negligence comprising most claims [29,38,39,42]. Such cases frequently arise from perceived failures in clinical judgment, patient communication, or failure to meet the standard of care. In contrast, lower frequency allegations, such as fraud, battery, or privacy breaches, often reflect more severe or isolated incidents. Despite their rarity, these cases can carry substantial legal and reputational consequences. Collectively, the data highlights the critical importance of maintaining high clinical standards, obtaining informed consent, ensuring clear communication, and adhering to both ethical and legal obligations to mitigate malpractice risk in dental practice. Although a dentist's foremost professional duty is to prevent malpractice, detailed information about such cases is often difficult to access due to the confidential nature of legal proceedings [85]. While previous research conducted by insurance companies has provided useful insights into malpractice trends [18-20,53,54], these findings are often limited by sampling biases, as they typically reflect only the experiences of the insurer's clients. In contrast, the present study leverages a broader dataset by examining dental malpractice cases available through the Google Scholar case law database, which includes several thousand legal decisions. This approach enhances the generalizability and reliability of findings compared to smaller, insurer-based studies with limited scope.

Nonetheless, certain limitations must be acknowledged. Notably, the dataset used in this study did not allow for the screening or exclusion of potentially frivolous or unsubstantiated claims, as such information was not publicly available. Future research should aim to improve the rigor of case selection by incorporating validated inclusion criteria and applying advanced statistical analyses to identify more nuanced patterns and correlations. Given the increasing volume of dental malpractice litigation, the growing likelihood of liability for dental practitioners, and the potential for substantial damage awards [38-50,54-58], there are strong professional and financial incentives for adopting proactive risk management strategies. Prioritizing the prevention of treatment failures, medication errors, diagnostic inaccuracies and communication breakdowns not only reduces legal exposure but also improves clinical outcomes. Ultimately, such efforts benefit patients, support provider well-being, and help maintain public trust in the dental profession.

Conclusion

Dentists should maintain comprehensive malpractice liability insurance to ensure equitable compensation for patients in the event of injury, while also safeguarding themselves against the potentially severe financial consequences of legal action. Enhancing patient safety necessitates targeted efforts toward protecting vulnerable populations, particularly children and improving the quality of dental care in hospital-based settings. The effective prevention of dental malpractice requires proactive, multidisciplinary collaboration among dental professionals, physicians and healthcare administrators. Because most dental errors are both preventable and unacceptable, a systematic approach is essential

to reducing their occurrence. The findings from this study suggest that approximately two-thirds of dental malpractice claims could be mitigated by increasing treatment success rates and ensuring prompt retreatment to minimize patient harm, pain and suffering. Nearly one-quarter of claims may be avoided through careful verification of prescribed medications, particularly about dosage accuracy and contraindications. Additionally, diagnostic errors account for roughly one in seven claims, emphasizing the need to strengthen diagnostic precision and clinical decision-making. Finally, one in twelve malpractice claims could potentially be prevented through improved communication and patient engagement, highlighting the pivotal role of clear, empathetic dialogue in building patient trust and promoting safe, effective care.

References

- Singhal S (2019) Do no harm: The Hippocratic Oath. *Natl Med J India* 32(6): 375.
- Indla V, Radhika MS (2019) Hippocratic oath: Losing relevance in today's world? *Indian J Psychiatry* 61(Suppl 4): S773-S775.
- Graskemper JP (2004) The standard of care in dentistry: Where did it come from? How has it evolved? *J Am Dent Assoc* 135(10): 1449-1455.
- Yansane A, Tokede O, Walji M, Obadan-Udoh E, Riedy C, et al. (2021) Burnout, Engagement and dental errors among US dentists. *J Patient Saf* 17(8): e1050-e1056.
- Kim MJ (2024) Trigeminal nerve injuries following dental procedures: A retrospective analysis of malpractice claims from 2016 to 2023 in South Korea. *J Forensic Leg Med* 106: 102730.
- Di Lorenzo P, Di Donna G, Casella C, Cortese R, Bianchi I, et al (2024) Professional liability in dentistry: Structure and causes of judicial litigation. *J Forensic Odontostomatol* 42(3): 59-65.
- Ellek DM (2005) The ADA's practice parameters. *J Am Coll Dent* 72(4): 23-27.
- Manca R, Bruti V, Napoletano S, Marinelli E (2018) A 15-year survey for dental malpractice claims in Rome, Italy. *J Forensic Leg Med* 58: 74-77.
- Mills A, Berlin-Broner Y, Levin L (2023) Improving patient well-being as a broader perspective in dentistry. *Int Dent J* 73(6): 785-792.
- Barbell PR (2015) Ethical concerns. *J Am Dent Assoc* 146(2): 75.
- Oral Health in America: Advances and Challenges (2021) Section 1 effect of oral health on the community, overall well-being, and the economy. Bethesda (MD) national institute of dental and craniofacial research (US), USA.
- Van Der Weijden GAF, Dekkers GJ, Slot DE (2019) Success of non-surgical periodontal therapy in adult periodontitis patients: A retrospective analysis. *Int J Dent Hyg* 17(4): 309-317.
- Gulabivala K, Ng YL (2023) Factors that affect the outcomes of root canal treatment and retreatment-A reframing of the principles. *Int Endod J* 56 (Suppl 2): 82-115.
- Engle RL, Mohr DC, Holmes SK, Seibert MN, Afable M, et al. (2021) Evidence-based practice and patient-centered care: Doing both well. *Health Care Manage Rev* 46(3): 174-184.
- Graskemper JP (2002) A new perspective on dental malpractice: Practice enhancement through risk management. *JADA* 133(6): 752-757.
- Dental Malpractice Can Be Fatal (2020) Hale & Monico.
- Dental Malpractice Law (2025) Justia.
- Kohn LT, Corrigan JM, Donaldson MS, Institute of medicine (US) committee on quality of health care in America (2000) To err is human: Building a safer health system. National Academies Press, Washington (DC), USA.
- Rasool MF, Rehman AU, Imran I, Abbas S, Shah S, et al. (2020) Risk factors associated with medication errors among patients suffering from chronic disorders. *Front Public Health* 8: 531038.
- Alghamdi AA, Keers RN, Sutherland A, Ashcroft DM (2019) Prevalence and nature of medication errors and preventable adverse drug events in pediatric and neonatal intensive care settings: A systematic review. *Drug Saf* 42(12): 1423-1436.
- National Academies of Sciences, Engineering and Medicine (2015) Improving diagnosis in health care. National Academies Press, Washington, DC, USA.
- Hall KK, Shoemaker-Hunt S, Hoffman L (2020) Making healthcare safer III: A critical analysis of existing and emerging patient safety practices [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US). Diagnostic Errors.
- Auerbach AD, Lee TM, Hubbard CC, Ranji SR, Raffel K (2024) Diagnostic errors in hospitalized adults who died or were transferred to intensive care. *JAMA Intern Med* 184(2): 164-173.
- Rodziewicz TL, Houseman B, Vaqar S, et al (2024) Medical error reduction and prevention. In: *Stat Pearls* [Internet], Stat Pearls Publishing, Treasure Island (FL), Florida, USA.
- Velo GP, Minuz P (2009) Medication errors: Prescribing faults and prescription errors. *Br J Clin Pharmacol* 67(6): 624-628.
- Reiner G, Pierce SL, Flynn J (2003) Wrong drug and wrong dose dispensing errors identified in pharmacist professional liability claims. *J Am Pharm Assoc* 60(5): e50-e56.
- Schupbach JCS, Kaisler MC, Moore GP, Sandefur BJ (2021) Physician and pharmacist liability: Medicolegal cases that are tough pills to swallow. *Clin Pract Cases Emerg Med* 5(2): 139-143.
- Raveesh BN, Nayak RB, Kumbar SF (2016) Preventing medico-legal issues in clinical practice. *Ann Indian Acad Neurol* 19(Suppl 1): S15-S20.
- Cheluvappa R, Selvendran S (2020) Medical negligence-key cases and application of legislation. *Ann Med Surg (Lond)* 57: 205-211.
- Strong DE (2011) Access to enforcement and disciplinary data: Information practices of state health professional regulatory boards of dentistry, medicine and nursing. *J Health Hum Serv Adm* 33(4): 534-70.
- Perich ML (1988) Maintaining ethical standards in today's dental practice. A perspective of the American Dental Association. *J Am Coll Dent* 55(2): 20-22.
- Green MA, Resnick CM, Mercuri LG (2022) Characteristics of medical malpractice claims involving temporomandibular joint surgery in the United States. *J Oral Maxillofac Surg* 80(7): 1153-1157.
- Pour H, Subramani K, Stevens R, Sinha P (2022) An overview of orthodontic malpractice liability based on a survey and case assessment review. *J Clin Exp Dent* 14(9): e694-e704.
- De Brauwier F, Bertolus C, Goudot P, Chaine A (2019) Causes for litigation and risk management in facial surgery: A review of 136 cases. *J Stomatol Oral Maxillofac Surg* 120(3): 211-215.
- Guo S, Zhong S, Zhang A (2013) Privacy-preserving Kruskal-Wallis's test. *Comput Methods Programs Biomed* 112(1): 135-145.
- Gliniecka M (2023) The ethics of publicly available data research: A situated ethics framework for reddit. *Social Media + Society* 9(3).
- Korhonen V (2024) Total population in the United States by gender from 2010 to 2027.
- Claims Bible (2023) Dental negligence claim calculator.
- Calculate my case (2024) Average settlement for dental negligence-2024 data & case examples.
- Lane Glassman, A Dental Law Firm (2012) Dental malpractice suit-\$2.96 million.
- Levine LS (2025) Our dental malpractice case results.
- Consumer Sheild (2025) Average payout for dental negligence claims.

43. Blume FF Zerres, Molinari (2015) \$325,000 Settlement for dental malpractice.
44. Chianese, Reilly Law (2025) Case results.
45. Piccuta Law Group (2023) Piccuta wins \$500,000 dollar jury verdict in dental malpractice lawsuit against Carmel dentist.
46. Vinas, Deluca Injury, Accident Lawyers (2022) Broward County jury returns \$1,173,610 verdict for victim of dental malpractice.
47. McKiggan Hebert (2019).
48. <https://www.shipmangoodwin.com/insights/dollar4500000-verdict-dental-malpractice-overfill-of-sealer-during-root-canal.html>
49. Medical Malpractice Lawyers (2024) \$11 million dental malpractice verdict in Pennsylvania.
50. Top 10 largest medical malpractice settlements.
51. KJT Law Group (2023) Understanding the duty of care in dental malpractice cases.
52. Knowles E (2024) Calculating dental malpractice settlement amounts.
53. Ji YD, Peacock ZS, Resnick CM (2020) Characteristics of national malpractice claims in oral and maxillofacial surgery. *J Oral Maxillofac Surg* 78(8): 1314-1318.
54. Clark N, Paquin N, Nevin J (1984) Dental malpractice: Baseline data from insurance claims closed in 1970, with analysis. *Public Health Rep* 99(1): 87-93.
55. Med Pro Group (2024) Understanding dental malpractice cases: Answers to common questions.
56. Wu KJ, Hsieh SC, Yang CN, Chen YW, Lai CL, et al. (2023) Endodontic malpractice litigations in the United States from 2000 to 2021. *J Dent Sci* 18(1): 374-381.
57. Givol N, Rosen E, Taicher S, Tsesis I (2010) Risk management in endodontics. *J Endod* 36(6): 982-984.
58. Hamasaki T, Hagihara A (2021) Dentists' legal liability and duty of explanation in dental malpractice litigation in Japan. *Int Dent J* 71(4): 300-308.
59. Freidin J (2025) What are the odds of winning a medical malpractice lawsuit?
60. Zayed Law Offices Personal Injury Attorneys-Personal Injury Law Firm in Chicago (2022) What are the odds of winning a medical malpractice suit?
61. Dong S, Shi C, Zeng W, Jia Z, Dong M, et al. (2022) The application of graph theoretical analysis to complex networks in medical malpractice in China: Qualitative study. *JMIR Med Inform* 10(11): e35709.
62. Pour H, Subramani K, Stevens R, Sinha P (2022) An overview of orthodontic malpractice liability based on a survey and case assessment review. *J Clin Exp Dent* 14(9): e694-e704.
63. The Dental Advocate (2025) 3 Surprising malpractice statistics & how you can avoid becoming one.
64. Jena AB, Seabury S, Lakdawalla D, Chandra A (2011) Malpractice risk according to physician specialty. *N Engl J Med* 365(7): 629-636.
65. Studdert DM, Mello MM, Sage WM (2005) Defensive medicine among high-risk specialist physicians in a volatile malpractice environment. *JAMA* 293(21): 2609-2617.
66. Institute of Medicine (US), Committee on the future health care workforce for older Americans (2008) Retooling for an aging America: Building the health care workforce. Health Status and Health Care Service Utilization. National Academies Press, Washington (DC), USA.
67. Rothschild JM, Federico FA, Gandhi TK (2002) Analysis of medication-related malpractice claims: causes, preventability and costs. *Arch Intern Med* 162(21): 2414-2420.
68. D'Errico S, Zanon M, Radaelli D (2022) Medication errors in pediatrics: Proposals to improve the quality and safety of care through clinical risk management. *Front Med (Lausanne)* 8: 814100.
69. Huynh C, Wong ICK, Correa-West J (2017) Pediatric patient safety and the need for aviation black box thinking to learn from and prevent medication errors. *Paediatr Drugs* 19(2): 99-105.
70. Che J, Malecki KC, Walsh MC (2014) Overall prescription medication use among adults: Findings from the survey of the health of Wisconsin. *WMJ* 113(6): 232-237.
71. Charlesworth CJ, Smit E, Lee DS (2015) Polypharmacy among adults aged 65 years and older in the United States: 1988-2010. *J Gerontol A Biol Sci Med Sci* 70(8): 989-995.
72. National Institute of Dental and Craniofacial Research (US) (2021) Oral health in America: Advances and challenges. Executive Summary, Bethesda, Maryland, USA.
73. Ranly DM, Garcia-Godoy F (2000) Current and potential pulp therapies for primary and young permanent teeth. *J Dent* 28(3): 153-161.
74. Sage WM, Boothman RC, Gallagher TH (2020) Another medical malpractice crisis? Try something different. *JAMA* 324(14): 1395-1396.
75. Murdoch AIK, Blum J, Chen J, Baziotis-Kalfas D, Dao A, et al. (2023) Determinants of clinical decision making under uncertainty in dentistry: A scoping review. *Diagnostics (Basel)* 13(6): 1076.
76. Tokede O, Walji M, Ramoni R, Rindal DB, Worley D, et al. (2021) Quantifying dental office-originating adverse events: The dental practice study methods. *J Patient Saf* 17(8): e1080-e1087.
77. Hanganu B, Iorga M, Muraru ID, Ioan BG (2020) Reasons for and facilitating factors of medical malpractice complaints. What can be done to prevent them? *Medicina (Kaunas)* 56(6): 259.
78. Höhn A, Gampe J, Lindahl-Jacobsen R (2020) Do men avoid seeking medical advice? A register-based analysis of gender-specific changes in primary healthcare use after first hospitalization at ages 60+ in Denmark. *J Epidemiol Community Health* 74(7): 573-579.
79. Panagioti M, Khan K, Keers RN (2019) Prevalence, severity and nature of preventable patient harm across medical care settings: systematic review and meta-analysis. *BMJ* 366: 14185.
80. Gorshkalova O, Munakomi S (2023) Duty to Warn. *StatPearls [Internet]*. StatPearls Publishing, Treasure Island, Florida, USA.
81. Friedman S (1990) Endodontic retreatment. *Alpha Omegan* 83(4): 32-37.
82. Obadan-Udoh E, Howard R, Valmadrid LC, Walji M, Mertz E (2024) Patients' experiences of dental diagnostic failures: A qualitative study using social media. *J Patient Saf* 20(3): 177-185.
83. Jan AM, Albenayan R, Alsharkawi D, Jadu FM (2019) The prevalence and causes of wrong tooth extraction. *Niger J Clin Pract* 22(12): 1706-1714.
84. Ziegler C, Parikh PJ (2024) Interruptions in a dental setting and evaluating the efficacy of an intervention: A pilot study. *PLoS One* 19(4): e0296677.
85. Bryne E, Bergum KH, Gjedrem WG (2024) Improving oral health in prisons (PriOH): Protocol for a randomized controlled trial. *JMIR Res Protoc* 13: e60817.
86. Nalliah RP, Allareddy V, Allareddy V (2014) Dentists in the US should be integrated into the hospital team. *Br Dent J* 216(7): 391-392.
87. Murray PE, Ede-Nichols D, Garcia-Godoy F (2006) Oral health in Florida nursing homes. *Int J Dent Hyg* 4(4): 198-203.
88. American Association of Endodontists (2020) Treatment standards.
89. Large A (2020) Managing patient expectations. *BDJ Team* 7(9): 31.