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AN INTEGRATIVE LITERATURE REVIEW ON DENTAL ETHICS AND MALPRACTICE – AN EXPLORATORY STUDY.

Uma revisão integrativa da literatura sobre ética e negligência odontológica – um estudo exploratório.

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ABSTRACT

Dental ethics implies dentists' moral duties and obligations towards their patients, colleagues, and society. An increased risk of litigations might transpire with subpar implementation of ethical values in practice. This study aimed to investigate the types of dental malpractice in several departments considering the pre-, intra- and post-operative phases. A Narrative Literature Review of publications between 2009 and 2023 was carried out using a Boolean strategy comprising terms related to Dentistry and malpractice. The articles were screened on Rayyan QCRI software, and the categories of selected articles were quantitatively analyzed using Microsoft Excel 2019 (Microsoft Corp., Redmond, WA, USA). The 97 selected papers were categorized into case reports (n=16, 16.49%), analyses of case reports (n=45, 46.39%), surveys (n=6, 6.19 %) and recommendations (n=30, 30.93%). Oral and Maxillofacial Surgery (n=25; 27.47%) and Endodontics (n=14; 15.38%) were the specialities with the highest malpractice reports and the Intra-operative treatment phase presented most of the liabilities. In dentistry, the technique-sensitive and invasive nature of the specialities contributed to the highest liabilities (Oral Surgery and Endodontics) indicating the need for improved training and adherence to protocols. Most of the lawsuits were due to mishaps during the treatment and their consequences post-operatively. A list of recommendations for dentists has been created aiming to help the relationship between them and patients.

KEYWORDS

Forensic odontology; Ethics; Litigation; Malpractice.

INTRODUCTION

According to the World Health Organization (WHO) in 2023, the ratio of dentists to patients is less than 5 to 10,000 from over 67% of the Member States[1]. Global Health Observatory Data Repository from the same year shows that countries in Africa have as low as 0.01 dentists per

10000 population whereas countries such as San Marino, Cuba, and Argentina have the highest ratios of 17, 16, and 15 dentists per 10,000 population respectively[2].

Although the ratio of dentists to population varies drastically between countries, malpractice and negligence issues are common worldwide. Malpractice is characterized as an injury resulting from negligent dental procedures, the failure to diagnose or treat potentially critical oral conditions, delayed diagnosis or treatment of oral diseases or other precarious oral conditions, and any malevolent or intentional misconduct by the dental professional. In contrast, negligence is defined as the careless actions of a medical professional that compromise the mandated standards of healthcare[3,4]. Numerous studies have been published discussing case reports and dental lawsuits worldwide. Still, the exact number of cases is unknown as information regarding liabilities is not always published and/or difficult to access[4].

The word 'ethics' originates from the Greek word 'ethos' which means character or conduct. Ethics can be understood as more than a set of rules or restrictions; rather, it constitutes an unspoken code of conduct that encompasses professional behavior and judgment[5,6]. Dental ethics implies the moral duties and obligations of dentists towards their patients, colleagues, and society[7]. Each country's governing dental organization has its code of ethics for dental practitioners. However, they share the principle of putting the patient first. The concept of evidence-based medical practice, originating in the 19th century, is characterized as the conscientious, explicit, and judicious application of the most current and reliable evidence for optimal decision-making in patient care[8]. Consequently, from a judicial perspective, a good dental treatment is performed according to the expected duty of its inherent clinical procedures. According to American Dental Association (ADA) however, 60 per cent of the population dread a dental visit, and 5-10 per cent have been diagnosed with dental phobias. Such patients usually present with poor oral health and functional impairment due to avoidance of treatment until their symptoms have aggravated to a point where they cannot postpone their visit any longer[9]. A vicious cycle of dental fear has been hypothesized wherein dental fear results in complex dental issues and symptomatic visits which results in maintenance or aggravation of dental fear[10]. In practice, this complex treatment phenomenon contributes to malpractice litigation risks[11]. This study aims to investigate the incidents of malpractice in the various specialities of dentistry, elucidate their forensic implications, create a list of recommendations for dental professionals to augment ethical practice and aid forensic odontologists in dental identification.

MATERIALS AND METHOD

The research questions to investigate the incidents of malpractice in dentistry were: *1) What are the departments in dentistry where malpractice is more commonly cited in the literature? 2) What are the procedures in various departments in dentistry where malpractice is more*

commonly cited in the literature? 3) Do articles provide recommendations for best practices? And 4) Are there survey articles that address the knowledge and awareness of legal issues in dentistry? PubMed electronic database was utilized for the search on January 12, 2024, for articles between 01/01/1999 and 31/12/2023 (15 years).

The search strategy is Pubmed Database is: *Dent** AND (*Liability* OR *Malpractice* OR *Misconduct* OR *Negligence*).

Only original articles and review articles published in the English language were considered. The exclusion criteria included (a) letters to editors, editorials, conference papers, opinions, books, and book chapters (b) articles that do not address the research questions (c) articles without full text (d) articles that provide unconfirmed hypotheses (e) articles that address issues which are not applicable in the current situation.

To begin with, the title, abstract, and keywords were screened for inclusion on the Rayyan Qatar Computing Research Institute (QCRI) web application[12]. Following the initial screening, the selected articles underwent full-text screening. Data extracted from the included articles were entered into Microsoft Excel 2019 (Microsoft Corp., Redmond, WA, USA). The data underwent categorization into relevant categories and sub-categories based on the study type, the speciality studied, and the treatment phase involved in the claim. Statistical analysis was done using charts and tables in Microsoft Excel.

RESULTS

I. Search Process

The search criteria resulted in a total of 1274 articles, of which 97 were included after reading their full text (*Figure 1)*.

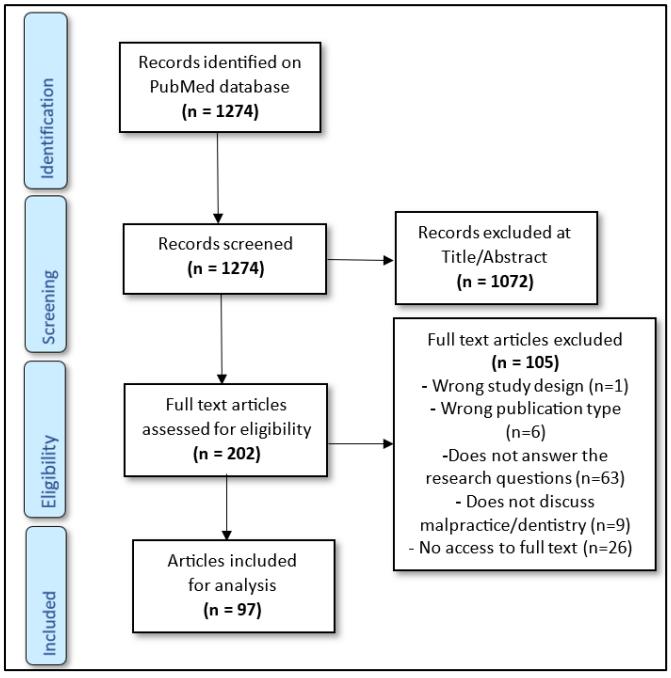

Figure 1- PRISMA flowchart of the search process for Malpractice in Dentistry.

II. Analysis of results

In the analysed dataset comprising 97 articles, six survey articles were excluded from departmental categorisation (Tables 2 and 3) due to their focus on legal responsibilities and practices. Of the remaining 91 articles, Oral and Maxillofacial Surgery (n=25; 27.47%) followed by Endodontics (n=14; 15.38%) had the highest reports of malpractice in terms of specialities. The broad category of General Dentistry (n=19; 20.88%) had the second-highest number of malpractice reports overall. Prosthodontics (n=10, 10.99%), Implantology (n=10, 10.99%), Orthodontics (n=8; 8.79%), Pediatric Dentistry (n=3; 3.3%) and Periodontics (n=2; 2.2%) also contributed to the overall distribution of the study.

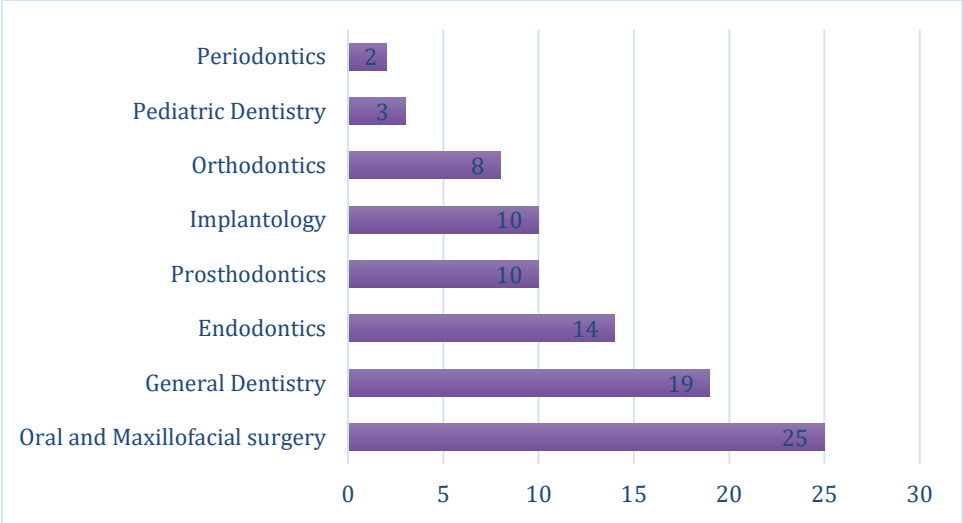

Figure 2- Distribution of malpractice cases according to Departments.

During the screening of the scientific papers, they were grouped into four categories (i-iv) as follows:

(i) Case reports

Within the subset of case reports (n=16), the majority centered on instances from Oral and Maxillofacial Surgery (n=6; 37.5%), followed by Endodontics (n=4; 25%), General Dentistry (n=2; 12.5%), Implantology (n=2; 12.5%), and Orthodontics (n=1, 6.25%), and Periodontics (n=1, 6.25%). To systematically categorize the procedures, the three peri-operative phases of surgery were employed. These phases include (i) the pre-operative phase which is the initial phase that includes all the procedures from the patient's initial assessment until the initiation of the procedure, (ii) the intra-operative phase which involves the treatment itself, and (iii) post-operative phase constituting the period from the end of the procedure until the patient's recovery. The gathered information was tabulated based on the departments and the phases of treatment involved. Individual citations were intentionally omitted within the tables for readability, but for transparency, a comprehensive list of all included articles

has been made available at http://tinyurl.com/2n86r737.The results for the case reports are given below *(Table 1).*

Table 1- Departments and procedures in dentistry where malpractice is common as seen in case reports.

DEPARTMENT	PRE-OPERATIVE	INTRA-OPERATIVE	POST-OPERATIVE
Endodontics	-	• Slippage of barbed wire broach into the oral cavity • Extreme extrusion of Gutta percha point and other filling materials beyond the apex • Using amalgam as root-end filling material • Incomplete and incorrect obturation with alteration of canal morphology, canal stripping	• Swelling, pain and pus discharge • Persistent periapical lesions, mandibular swelling, deep abscess fistula even after root canal treatment (RCT)
General Dentistry	• Failure to diagnose/ delayed diagnosis/ failure to refer a patient after diagnosis of Oral Carcinoma	• Aspiration of impression material	-
Implantology	-	• Screwdriver Ingestion • Dislodged implant into the sinus	-
Oral and Maxillofacial surgery	-	• Entire tooth/portion of the root pushed into submandibular space during extraction • Formalin injection in place of local anaesthesia • Foreign body in the socket • Displaced incisor into the base of parasymphysis after Open Reduction and Internal Fixation of parasymphysis fracture	• Delayed mandibular fracture after extraction of impacted tooth
Orthodontics	-	-	• Retained Orthodontic elastic in gingiva after treatment completion
Periodontics	-	• Formalin injected in place of local anaesthesia during flap surgery	-

(ii) Analyses of cases

Within the scope of our investigation, 45 articles met the criteria for inclusion in the analyses of cases category, representing contributions from six distinct departments and the over-arching category of General Dentistry. Notably, the field of Oral and Maxillofacial Surgery exhibited the highest volume of reports (n=12; 26.67%). Following closely were Endodontics as well as Prosthodontics, each contributing eight articles (17.78%), and Implantology contributed seven articles (15.56%). The broader category of General Dentistry comprised five articles (11.11%), while Orthodontics and Pediatric Dentistry had fewer contributions with three articles (6.67%) and two articles (4.44%), respectively. Analyses of cases performed in numerous countries were grouped

similarly to case reports and tabulated below *(Table 2).*

Table 2- Departments and procedures in dentistry where malpractice is common as seen in analyses of cases.

DEPARTMENT	PRE-OPERATIVE	INTRA-OPERATIVE	POST-OPERATIVE
Endodontics	• Incorrect/ Delayed diagnosis • Lack of information about the procedure • Failure to refer to other specialists • Abandonment of patients	• Serious accidental perforations in the root canal and chamber • Ledge formation • Lack of rubber dam when mandated • Instrumentation errors including fracture and separation • Tooth fracture • Aspiration/ ingestion of foreign bodies • Anaesthesia issues • Use of defective files • Irrigant/ Medicament-related injuries • Missed canals • Improper restorations • Voids, over/under-extended obturation • Damage to the adjacent anatomical structures • Incorrect tooth/treatment • Prolonged treatment	• Pain • Infection • Altered sensation • Tissue emphysema • Nerve paresthesia • Sinusitis • Cystic lesion • Loss of prosthetic crown • Loss of prosthetic bridge • Prolonged bleeding • Cracked tooth • Improper prescription of medications
Prosthodontics	• Changing the requested treatment • Negligence in the • management of patients with medical problems • Lack of informed consent • Incorrect diagnosis • Neglected periodontal disease	• Root perforation during post preparations • Inadequate treatment • Performing procedures beyond one's expertise • Open contacts between crown and teeth • Short margins on bridges • Impression material in the maxillary sinus	• Failed fixed and removable prosthesis • Porcelain or root fracture • Loss of retention • Inadequate measures to prevent gum injuries • Aesthetic dissatisfaction
Implantology	• Lack of informed consent • Unnecessary tooth extraction	• Performing treatment on the wrong side • Ingestion/ Aspiration of instruments/ materials. • Damage to the nerves and other adjacent anatomical structures • Invasion of the maxillary sinus	• Significant bone loss • Trigeminal Neuralgia • Chronic sinus damage • Eye damage • Pulpal dental necrosis in adjacent teeth • Death due to infection/ drug allergy/ latex allergy/ subarachnoid haemorrhage which occurred during anaesthetic injection • Need for implant replacement • Maxillary atrophy • Respiratory deficit. • Mandibular dysfunction • Neurological deficit • Post-operative infection • Sinusitis • Improper prescription of medications

Oral and Maxillofacial surgery	• Alleged delay in diagnosis or misdiagnosis • Issues related to informed consent and poor communicatio-n and documentatio-n, • Breach of privacy • Failure to diagnose cancer • Failure to refer or order diagnostic tests	• Damage to adjacent anatomical structures • Oro-antral communication • Drill burns • Instrumentation error • Fracture of tooth or bone • Sinus perforation • Extraction of the wrong tooth • Wrong site surgery • Trauma • Unnecessary operation • Sedation/general/ local anaesthesia error • Retained foreign bodies • Drill burns	• Neoplastic progression • Osteonecrosis • Prolonged pain postoperatively • Neurological deficit • Damage to the eye • Allergy • Altered taste • Excessive bleeding after extraction • Complications that required hospitalization • Postoperative infection • Temporo-mandibular joint (TMJ) complication • Mandibular dysfunction • Sensitive motor diseases due to nerve injury • Death or brain damage • Revision or correction surgery • Failure to prescribe antibiotics • Adverse cosmesis • Paraesthesia • Asymmetrical lips • Limited mouth opening
Orthodontics	• Need for tooth extractions • Misdiagnosis/ Delayed diagnosis • Violation of autonomy • Failure to recognize pre-existing periodontal conditions	• Inappropriate method of treatment • Treatment during active periodontal disease • Delayed extrusion of the impacted tooth leading to prolonged treatment duration	• Aesthetic dissatisfaction • Occurrence of periodontal disease • Facial asymmetry • Re-treatment due to poor treatment outcome • Excessive root resorption • TMJ injury
Pediatric Dentistry	• Misdiagnosis • Lack of record maintenance • Lack of diagnostic radiographs • Lack of parental informed consent	• Film errors leading to additional radiation exposure • Wrong tooth treatment • Accidental incision of cheeks, lips	• Administering incorrect dosage of medication • Tooth loss
General Dentistry	• Diagnostic errors • Failure to refer for biopsy • Failure to refer the patient to a specialist • Not obtaining informed consent	• Errors in technical execution • Failure to meet the standard of care	• Death due to infection • Adverse drug reactions • Anaphylaxis due to latex allergy • Permanent eye damage • Chronic Liver damage

(iii)Survey

The 'Survey' category encompassed six articles focusing on the Consumer Protection Acts and other legislative frameworks governing various facets of Dentistry, including dental records, informed consent, their maintenance, and the associated forensic and legal implications[13-18]. In summary, the results indicate a parallel understanding of legal responsibilities among postgraduate students and faculty in the dental field. Across the studies, participants exhibited diverse levels of familiarity with legal terminology, with a prevalent pattern of limited comprehension. Generally, a significant proportion of dentists do not uphold the maintenance of dental records, and a smaller percentage neglect the preservation of radiographs and cast models. There is a low awareness regarding the maintenance of these records and their forensic and legal implications. While a majority of orthodontists required

initial and final records, only about half consistently adhered to this practice over their careers. Notably, a good number of orthodontists documented damage to orthodontic accessories in their medical records. Most dentists possess good knowledge of informed consent; however, a detailed explanation of procedures, disclosure of risks, success and failure rates, and alternative treatment options are not consistently provided. Additionally, while the majority of dentists obtain written consent, a portion relies solely on verbal consent.

(iv) Recommendations for good practice

The group 'Recommendations for good practice' had a considerable number of articles (n=30) distributed across General Dentistry (n=12; 40%) and the specialities of Oral Surgery (n=7; 23.33%), Orthodontics (n=4; 13.33%), Endodontics (n=2; 6.67%), Prosthodontics (n=2; 6.67%), Periodontics (n=1; 3.33%), Paediatric Dentistry (n=1; 3.33%), and Implantology (n=1; 3.33%). A respectable number of recommendations were suggested in the articles which were categorized into their appropriate phases. A comprehensive compilation of these recommendations is presented in Supplementary Data 1 for reference.

DISCUSSION

In our study, Oral and Maxillofacial Surgery and Endodontics emerged as specialities with the highest reported rates of malpractice, aligning with findings from Greater Manchester, Riyadh, Turkey, Brazil, and Kerman province[19-22]. Studies in Tehran and Spain reported Fixed Prosthodontics and Implantology as areas of highest concern, whereas Portugal highlighted Orthodontic treatment, Implant rehabilitation, and Oral surgical procedures for the same[4,23-26]. Despite variations across countries and time periods, globally, Oral Surgery, Endodontics, and Prosthodontics appear consistently at the forefront of malpractice claims. Notably, within Endodontics, advancements in technology and engine-driven instrumentation have not mitigated the rising number of malpractice cases[27]. This suggests potential inadequacies in training or inappropriate application of skills by dentists.

The primary causes of liabilities were identified as errors in the intra-operative phase and their consequences post-operatively. Critical case reports included instances of injecting formalin in place of local anaesthesia (LA) before surgical procedures[28,29]. A literature search revealed two other instances of the same error[30,31]. The practice of storing local anaesthesia and formalin in unlabelled bottles must be condemned by professional organisations due to the dire consequences of such mishaps. Aspiration/ingestion of dental materials and instruments is another prevalent issue which necessitates a careful examination of high-risk factors during procedures to avert potential life-threatening emergencies. Factors such as handling small, saliva-coated instruments, inadequate lighting, unexpected movements, and equipment breakage contribute to the risk[32]. Incidents must be documented in the patient's record,

detailing proactive measures taken. If retrieval occurs in the clinic, thorough confirmation of the complete foreign body is imperative; otherwise, referral to appropriate medical care is warranted. Simple preventive measures, such as using a rubber dam while securing the clamp with floss to prevent dislodgement, can be effective. Other methods include gauze screens, altering chair position, using an optimal amount of material for dental impressions, and checking the oral cavity after impression taking.

The survey findings reveal a deficiency in dentists' knowledge and comprehension of legal terms and liabilities within the profession. Initiating training programs for dental students and practitioners by universities and dental councils is recommended to address and enhance awareness in this regard. Nevertheless, it remains incumbent upon dentists to educate themselves about dental legislative practices.

Understanding malpractice requires consideration of foundational elements encompassing dental education, students, parents, patients, governing organizations, and dental professionals. Lack of interest in a dental career may significantly impact clinical performance, particularly when influenced by societal and familial pressure. A recent Korean study 'I am a Nursing student but hate Nursing: The East Asian Perspectives between Social Expectation and Social Context' illustrates coerced career choices leading to aversion despite nearing course completion[33]. Parents should be cautioned against pressuring children into fields they have no genuine interest in, as this may lead to disinterest and aversion to the subject[34,35].

Educational institutions are pivotal in shaping dental professionals. Issues may arise in training when there are increased annual intakes, potentially leading to decreased individual monitoring and mentoring. Suboptimal student performance may also result from the high workload and stress associated with medical education. To ensure the maintenance of educational standards, it is imperative to implement and routinely audit quality assurance protocols.

Teaching-related challenges for university academic staff stem from a demanding environment, including stressors like work pressure, large student populations, aggressive behaviors, learning difficulties, administrative duties, low job satisfaction, conflicts, and extended work hours[36-38].

These challenges may significantly impact teaching quality, influencing student performance. Consequently, educational institutions must allocate resources for stress management and devise policies addressing these factors.

Burnout, often considered taboo, is prevalent, characterised by reduced occupational efficiency, negativity towards one's career as well as constant exhaustion[39]. A systematic review of burnout amongst university staff highlights its widespread prevalence, attributed to evolving teaching methods, budget cuts, research expectations, and demanding academic staff roles[40]. Considering the characterization of burnout, it is reasonable to assume that clinician burnout may also lead to suboptimal work performance,

potentially resulting in errors. Primary causes of physician burnout include fear of litigation, time pressure, financial constraints, age, work environment, working hours, and challenges in treating difficult patients[41-43]. Physicians often lack time to seek medical care due to these constraints and avoid doing so due to the fear of professional consequences and the associated stigma[44]. Dental councils should intervene to reduce stress factors, enhance working conditions, and improve the overall well-being of dental professionals.

Effective communication between dentists, patients, and the dental team is critical, yet often overlooked. Establishing a robust relationship requires efficient communication to prevent misunderstandings that could escalate into malpractice suits[45]. Patients may withhold medical history, disregard instructions or hold unrealistic expectations regarding treatment outcomes. These may stem from past negative experiences, embarrassment, anxiety, or dental phobias. Stigma and lack of awareness about the relevance of medical and social history in dentistry contribute to patients' failure to disclose information[46,47]. Patients may not comprehend the necessity for certain procedures, leading them to pressure dentists to expedite treatment, impacting record maintenance. Overcoming these challenges requires effective verbal, non-verbal, or written communication.

Dental malpractice has far-reaching implications, involving forensic odontologists in three key ways. Firstly, these experts serve as witnesses in court, providing opinions on alleged malpractice cases. Dentists may also be called upon for this role, necessitating a well-grounded perspective in clinical and medico-legal knowledge. Maintaining objectivity and delivering opinions based on facts is crucial to avoid potential repercussions for those lacking expertise. Secondly, accurate recording of dental errors through various means aids forensic odontologists in victim identification, utilizing dento-alveolar morphology as a unique identifier. Lastly, failure to record clinical errors or falsify records may lead to misidentification post-mortem, risking exclusion based on discrepancies between ante-mortem and post-mortem data. Such exclusions, even in cases with multiple concordant factors, pose challenges when dental means are primary identifiers. This necessitates reliance on alternative identification methods, like DNA analysis, and causes prolonged waiting times for families, leading to significant mental anguish.

The findings of this study have led to the formulation of recommendations aimed to enhance the rapport between dentists and patients, to ensure the delivery of requisite standards of care, to foster adherence to ethical practice values, and to facilitate collaboration with forensic odontologists. These recommendations are presented along with their rationale as follows:

S. No	RECOMMENDATION	RATIONALE
	Pre-operative phase	
1	To follow the Code of Ethics and Code of Conduct.	It is the professional obligation of a dentist to follow the codes put forth by their governing organisation. Any breach of ethics and conduct can result in malpractice claims.
2	To record and update dental records during each appointment.	Dental records apart from being a professional obligation, also help dentists during lawsuits if all details are recorded accurately.
3	To record the presenting complaint in the patient's own words, past dental history and complete medical and social history during the first visit. The patients should be informed of the protocols to be followed in the clinic and the importance of transparency and honesty when enquired about their history should be emphasized.	Noting the patient's chief complaint in their own words helps in diagnosis and avoids misunderstandings of their concern. Failing to take the history of the patient could result in adverse outcomes if the treatment could affect the health of the patient. When patients do not understand the importance of protocol, they tend to get agitated and coerce dentists to skip protocol to get treated quicker.
4	To follow one of the three International systems namely the Federation Dentaire International, Universal system, or Palmer Notation. Colour codes and abbreviations should be explained if used. Any additional findings such as dental anomalies, tooth rotations and spacing should be noted.	Improper charting methods are difficult to decipher during ante-mortem record examination in cases of victim identification. Dental anomalies aid in identification as they can be unique within a closed population.
5	To obtain the physician's consent for patients with medical history, especially those requiring invasive treatments.	Obtaining a physician's consent helps ensure the patient's safety and avoid litigation in case of unfavourable outcomes.
6	To take radiographs only after the clinical examination is complete.	Only when the clinical examination is complete, the dentist will know the exact teeth which require radiographs and what type of radiograph would be best suited for the patient's needs.
7	To follow As Low As Reasonably Achievable (ALARA) Principle for radiography at all times. High radiation radiographic techniques such as Cone Beam Computed Tomography (CBCT) should be taken only if necessary and can be justified.	The principle of ALARA helps ensure radiation safety for the patient by keeping the dosage of exposure as minimal as possible. Avoiding high radiation techniques such as CBCT also helps prevent exposing the patient unnecessarily.
8	To formulate the treatment plan only after arriving at a final diagnosis supported by both clinical and radiographic examination.	Results of the examination help ensure that all the complaints of the patient are addressed and treated suitably.
9	To obtain a signed informed consent after informing the patients about the treatment plan, its alternatives, and possible outcomes. If the patient cannot decide on their treatment (minors and mentally challenged patients), their next of kin should acknowledge and sign on their behalf.	Written informed consent with the signature is physical proof of respecting the code of ethics and is usually a part of the guidelines put forth by dental organisations.
10	To refer the patient to an expert if the treatment is beyond one's area of expertize.	When a dentist oversteps their area of expertize, he/she is putting the patient's health at risk It also makes the dentist vulnerable to malpractice claims.
11	To prescribe Pre-Operative and Post-Operative medications appropriately.	Medicine prescription is a crucial step that must not be overlooked. Pre-Operative and Post-Operative medicines help promote healing without infection or other consequences.
12	To never guarantee a patient's results.	Guaranteeing results leads to increasing patient's expectations of the treatment outcome which might lead to liabilities since not all outcomes are the same.
	Intra-Operative Phase	
13	To perform evidence-based treatment.	Evidence-based dental practice utilizes peer-reviewed methods combined with the patient's needs to provide the best possible treatment for the patient.
14	To maintain a record of errors/accidents during the procedure or the presence of consequential changes in the oral cavity, along with radiographs if necessary.	Recording the alteration of the morphology of dento-alveolar structures after procedural errors can act as unique identifiers when utilized by forensic odontologists to compare with post-mortem records.

	Post-Operative Phase	
15	To inform patients of their duty for post-operative care and follow-up, with the instructions in written or printed format. It should be reiterated that poor oral hygiene might lead to post-operative complications.	After the treatment is performed by the dentist, it is the duty of the patient to follow the instructions given by the physician. Written instructions would serve as physical proof of delivering the instructions as well as a reminder for the patients of all the steps that they must follow.
16	To maintain the dental records for the time stipulated by their Dental Council. To scan and store a copy of the records when the record maintenance period is over.	Destroying a patient's records after the minimum maintenance period is complete may put dentists at risk if claims are made several years after the treatment. It may also be useful for forensic purposes at any point in time. Scanning the records and storing them digitally reduces physical storage space, protects dentists, and helps forensic odontologists.
17	To provide dental records for legal purposes only after obtaining a letter of request from the associated authority. In these circumstances, copies may be provided, and original documents withheld.	A letter of request is a record that the breach of confidentiality by the dentist in providing the patient's records to the legal system was done keeping the patient's best interest in mind.
	General	
18	To get professional indemnity insurance.	Professional Indemnity Insurance provides cover for legal expenses incurred as well as compensation for damage to the patient in cases of malpractice or negligence.
19	To renew professional licence timely.	Practising after the licence expires is considered to be practising without a licence and is a punishable offence.
20	To understand the importance of Practice management in clinical practice and hire a practice manager if necessary.	Practice management helps the clinic run in an organized manner and provides the patient with outstanding treatment.
21	To follow the legal rules of the country and their dental council for advertising/marketing one's practice.	Using a patient's face or oral cavity for marketing is not always permitted in all countries. The patient must also provide permission for that. Failure to follow guidelines can lead to legal issues.
22	To be aware of the medico-legal aspects in their country.	It is the legal obligation of the dentist to know the laws related to the healthcare system in the country.
23	To train the Dentists and the dental team in medical emergencies.	Medical emergencies in the dental practice are not uncommon and being equipped to handle the same is a legal and professional obligation of dentists.
24	To attend Continuing Professional Development (CPD) programmes periodically and update their knowledge.	With the constant evolution of the field with advancements in technology and research, dentists must update themselves and progress with the field.
25	To value and train to improve communication as it is the key to a good relationship between the dentist, dental team, and the patient.	Miscommunications often result in undesirable outcomes due to misinterpretation of information.

CONCLUSION

Ethical problems and consequential legal issues are a part of every aspect of life and occupation. In the field of healthcare, however, these issues can cause significant and sometimes fatal consequences. When it comes to litigations in dentistry, the issues may range from minor damage to oral structures to death on the dental chair. The results of this study showed that the specialities of Oral and Maxillofacial Surgery and Endodontics had the highest number of malpractice reports globally. The findings showed that the lack of technical expertise required in these specialities was the prime cause of errors as physicians needed more training to improve their dexterity when performing such procedures. The cause of liabilities was primarily due to mishaps during the treatment and their consequences post-operatively. Following the protocols diligently from the time the patient enters the clinic, performing evidence-based procedures, and persistently updating one's knowledge and clinical skills would help reduce instances of legal issues. Apart from this, dentists must bear in mind that

accidents, their consequences, or other forms of negligence and malpractice must be recorded accurately in the dental record of the patient as failure to do so will inadvertently affect the identification of the patient if it is necessary in the future. A list of recommendations is suggested to serve as a guide to help dental practitioners guard against dento-legal disputes.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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RESUMO

A ética odontológica implica deveres e obrigações morais dos dentistas para com seus pacientes, colegas e sociedade. Um risco aumentado de litígios pode ocorrer com a implementação abaixo da média de valores éticos na prática. Este estudo teve como objetivo investigar os tipos de negligência odontológica em vários departamentos, considerando as fases pré, intra e pós-operatória. Uma revisão narrativa da literatura de publicações entre 2009 e 2023 foi realizada usando uma estratégia booleana compreendendo termos relacionados à odontologia e negligência. Os artigos foram selecionados no software Rayyan QCRI, e as categorias de artigos selecionados foram analisadas quantitativamente usando o Microsoft Excel 2019 (Microsoft Corp., Redmond, WA, EUA). Os 97 artigos selecionados foram categorizados em relatos de caso (n = 16, 16,49%), análises de relatos de caso (n = 45, 46,39%), pesquisas (n = 6, 6,19%) e recomendações (n = 30, 30,93%). Cirurgia Oral e Maxilofacial (n=25; 27,47%) e Endodontia (n=14; 15,38%) foram as especialidades com maiores relatos de negligência e a fase de tratamento intraoperatório apresentou a maior parte dos passivos. Na odontologia, a natureza técnica sensível e invasiva das especialidades contribuiu para os maiores passivos (Cirurgia Oral e Endodontia) indicando a necessidade de melhor treinamento e adesão aos protocolos. A maioria dos processos judiciais foi devido a percalços durante o tratamento e suas consequências no pós-operatório. Uma lista de recomendações para dentistas foi criada com o objetivo de ajudar o relacionamento entre eles e os pacientes.

PALAVRAS CLAVE

Odontologia forense; Ética; Litígio; Negligência.

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