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ORIGINAL ARTICLE

Dental malpractice lawsuit cases in Saudi Arabia: A national study

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Abstract *Introduction:* Over the past twenty years, dental practice in Saudi Arabia has developed considerably, along with increase in population's knowledge of their rights. However, there is a lack of evidence and research on dental malpractice lawsuit cases in Saudi Arabia. The aim of this study was to assess the prevalence and content of legal suits regarding dental malpractice in Saudi Arabia, and to explore the factors and circumstances that were associated with these cases.

Methods: This was a retrospective study on dental malpractice litigation cases between January 2017 and December 2020. Only cases with final court verdicts were included. The cases were collected from 13 Medico-Legal Committee (MLC) across Saudi Arabia while practitioners' data were retrieved from the General Directorate of Healthcare Licensing at Ministry of Health (MOH). A designed data sheet was used, which was categorized into three main sections: plaintiff demographic data, defendant demographic, data case details in the court.

Results: During the four years period, 864 cases with verdicts were studied. Most of the cases were against general dental practitioners, and majority of complaints involved prosthodontic procedures followed by endodontics. The majority of the malpractice lawsuit cases (93 %) were against non-Saudi dental practitioners and 72 % were against experienced practitioners with more than ten

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years of experience. Almost all cases were in the private sector. Only 10 % of cases had a consent form previously provided to the patients before treatment, and most of cases lacked proper medical documentation. The mean average trial period was 3.3 months and 76 % of defendants were found guilty.

Conclusion: The number of cases is rising since 2017. Good documentation, compliance to informed consent protocols and dental privileges helped practitioners to avoid being found guilty.

1. Introduction

Dental practice in Saudi Arabia has evolved significantly over the past twenty years along with the development of healthcare facilities, implementation of new technologies, and increased education and experience of health practitioners (Abomalik, Alsanea et al., 2022). However, with the development in healthcare and growing population's education and knowledge of their rights, an increase on legal suits was noticed against health care practitioners and facilities (Al-Saeed, 2010). These medical litigations were attributed to ethical and legal pitfalls, such as adverse event and medical errors (Aljarallah and Alrowaiss, 2013), misconduct (Aljarallah and Alrowaiss, 2013), improper communication (Aljarallah and Alrowaiss, 2013, Marei, 2013), lack of documentation (Nortjé and Hoffmann, 2014), breach of privacy (Marei, 2013), and lack of informed consent (Lopez-Nicolas, Falcón et al., 2007, Marei, 2013, Nortjé and Hoffmann, 2014, Epstein, Kish et al., 2015). Such medical litigations must be avoided to eliminate severe consequences on both the plaintiff and defendant (Acharya, Savitha et al., 2009).

Litigations in Saudi Arabia related to medical errors are administered by Ministry of Health through 27 Medico-Legal Committee (MLC) distributed across Saudi Arabia provinces (Ministry of Health, 2021). As per Law of Practicing Health Professions, the MLC is the competent judicial authority that look into medical malpractice in which the claim for a private right is filed for blood money (Diyah),(Albalawi, Kidd et al., 2020) indemnities for bodily injury (Arsh), or compensation (Alanizy, Alqurashi et al., 2021). Its members include a judge from the Ministry of Justice, legal counselor, university faculty physician / dentist, two physicians / dentists from the Ministry of Health, and secretory for trial recording, session arrangement and communications with the associated parties (Ministry of Health, 2021).

Any health care practitioner who commits malpractice such as an error in treatment, preforming experimental surgeries (AlDakhil, 2016) shall be liable for indemnification when causing harm to a patient which is determined by the MLC (Ministry of Health, 2021). In certain circumstances, the MLC may request the assistance of one or more experts on the specialty related to the malpractice lawsuit to examine and submit their opinion to the committee in a written report and discusses it in one or more session (Ministry of Health, 2021). Finally, verdict is decided by a majority vote of all members within the committee, provided that the majority includes the judge (Aljarallah and Alrowaiss, 2013). Once the committee reach the final verdict of conviction or clearance, it can only be appealed through the Board of Grievances within sixty days of its release (Ministry of Health, 2021).

Understanding the common malpractice area in dentistry in Saudi Arabia can help to improve the quality and outcome of treatment provided. It will also help to improve the communication between dentists and their patients. In the literature of Saudi healthcare malpractice, there is a lack of research on dental litigations that cover all provinces of Saudi Arabia. Hence, the aim of this study was to assess the prevalence and content of legal suits regarding dental malpractice in Saudi Arabia, and to explore the factors and circumstances that were associated with these cases.

2. Methodology

This was a retrospective study on closed cases sentenced by the MLC at the Ministry of Health (MOH) specifically on dental malpractice litigation cases that had a court verdict from January 2017 to December 2020.

The inclusion criteria of these cases were:

1. Cases based in Saudi Arabia.
2. Cases listed under "Dental Category" and were reviewed by a dental committee.
3. Cases that have ended with a verdict between January 2017 to December 2020.
4. Cases that include complete details of the complaint and trial.

Exclusion criteria included cases with missing data, duplicated verdicts, or anything other than mentioned in the inclusion criteria (e.g. cases that are still pending court verdict).

Access to data was granted by the General Department of Legal Health Authorities at MOH, health directorate in all cities of Saudi Arabia and General Department of Achieving & Documentation at MOH under the Institutional Review Board approval number #20-210E. Also, court verdict (Qarrar) was granted from MLC, while practitioners' data, such as years of experience and clinical rank were retrieved from the General Directorate of Healthcare Licensing at MOH.

A data collection form was created and tested on a pilot sample of 15 randomly selected cases to measure for validity and reliability.

The form was categorized into three main sections:

1- Plaintiff demographic data
   a. Plaintiff gender
   b. Nationality of the plaintiff

2- Defendant demographic data
   a. Case filed against whom
      i. Dental health institution

ii. Dental practitioner
iii. Both

b. Defendant gender
c. Dental school of graduation of the defendant
d. License status of the defendant.
e. Specialty of the defendant
f. Rank of the defendant
g. Years of experience of the defendant
h. Nationality of the defendant

3- Case details in the court
a. City \ province of incident
b. Sector of incident
c. Trial period in months
d. Number of court sessions
e. Is there a proven medical error after committee's review
f. Specialty of the reported complaint
g. Was the treatment done beyond the practitioner's expertise?
h. Presence of written informed consent
i. Presence of proper medical documentation and treatment planning
j. Presence of Diagnostic aids (OPG, Cephalometric, CBCT, PA, BW, diagnostic casts)
k. Court verdict
l. Indemnity money paid by the defendant to the plaintiff
m. Indemnity money paid by the institution to the plaintiff
n. Financial penalty paid by the defendant to the government
o. Financial penalty paid by the institution to the government
p. Amount of money paid for the plaintiff as Reconciliation

Data entry was done using a coding system for each case to maintain confidentiality. Each case was coded according to the city abbreviation, year of verdict, and order in case line.

Data were entered and analyzed using the statistical software IBM SPSS, Version 26.0. Armonk, NY: IBM Corp. Categorical data such as cases' baseline characteristics were presented as frequencies and percentages, while numerical data such as indemnity and financial penalty paid were presented as mean and standard deviation. ANOVA test was used to compare numerical data by categorical data such as region and year of the case. Chi-square test was used to assess the association between categorical data. A test was considered significant if p-value < 0.05.

3. Results

The study included 864 cases. Almost two-thirds of the cases were in 2019 and 2020. The majority (75.5 %) were against dental practitioner only while 22.7 % were against both the dental practitioner and the institution. Two-thirds of the cases were against male practitioners, while 93 % of practitioners were graduates from non-Saudi dental schools. The majority of the cases (71.9 %) were against general practitioners followed by the registrars (18,7%). Most of the cases (71.5 %) were against experienced practitioners with more than ten years. The vast majority (93.1 %) were against non-Saudi practitioners. For patients' gender, female patients were involved in 443 (55.4 %) of those cases, and 750 (93.9 %) were Saudi patients. Almost all cases were in the private sector except 24 cases (2.8 %). After committee's review, 562 (65 %) of the cases were found to have a proven medical error, and in 372 cases (43.9 %) the treatment done was beyond the practitioner's expertise. (Table 1). More than two-thirds of the cases were against a general dentist, followed by orthodontists (12.8 %), and oral and maxillofacial surgeons (6.3 %) (Fig. 1).

The number of court sessions ranged from 1 to 11 sessions with an average of 1.9 ± 1.2 per trial and took an average period of 3.3 ± 7.4 months. In terms of compensation, the average indemnity money paid by the defendant to the plaintiff was 26,297 ± 44,739 SAR and 23,356 ± 34,622 SAR by the insti-

Table 1 Cases baseline characteristics.

Variable	Category	N	%
	2017	111	12.8
	2018	147	17.0
	2019	324	37.5
	2020	282	32.6
The case filed against	Dental practitioner	652	75.5
	Dental health institution	16	1.9
	Both	196	22.7
Practitioner Gender	Male	562	66.3
	Female	286	33.7
Dental School of Graduation of the Practitioner	Governmental - Saudi	34	4.0
	Non-Saudi school	785	93.0
	Private - Saudi	25	3.0
Does the practitioner have a valid license?	Yes	664	78.5
	No	20	2.4
	Not mentioned	162	19.1
The rank of the Practitioner	Consultant	35	4.2
	General	605	71.9
	Registrar	157	18.7
	Resident	28	3.3
	Senior Registrar	16	1.9
Years of Experience of the Practitioner	< 5 years	26	3.1
	5–10 years	214	25.4
	greater than10 years	603	71.5
Is the Nationality of the Practitioner Saudi	Yes	58	6.9
	No	788	93.1
Patient Gender	Male	356	44.6
	Female	443	55.4
Is the Nationality of the Patient Saudi	Yes	750	93.9
	No	49	6.1
Sector of Incident	Private	840	97.2
	Governmental	24	2.8
Is there a proven medical error after committee's review	Yes	562	65.0
	No	257	29.7
	Not mentioned	45	5.2
Was the treatment done beyond the practitioner's expertise?	Yes	372	43.9
	No	476	56.1

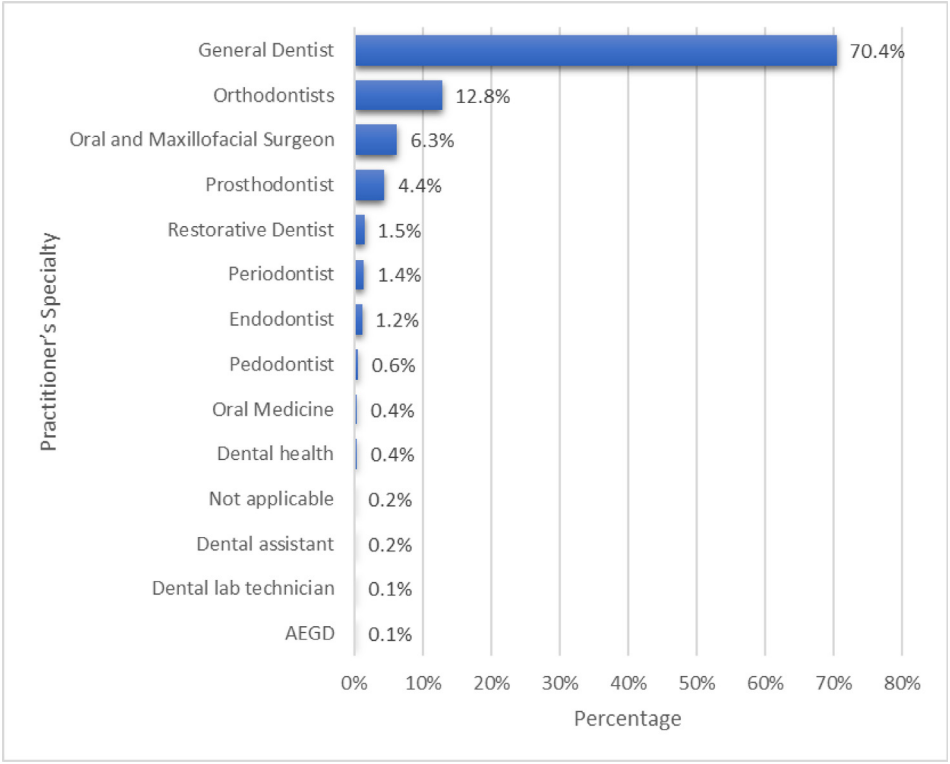

Fig. 1 Practitioner's Specialty.

tution. The average amount of financial penalty paid by the defendant to the government was 8,907 ± 13,750 SAR and 34,375 ± 30,066 SAR by the institution. The average amount of money paid for the plaintiff as reconciliation was 14,761 ± 20,859 SAR. (Table 2) Around 29.2 %, of the cases were in Riyadh followed by Jeddah with 14.9 % of the cases, and 9.4 % in Aseer. However, cases in Dammam, Alahsa, and Najran city were 8.2 % and 7.8 %, and 7.1 %, respectively. (Fig. 2).

In the majority of the cases (59.6 %) lacked documentation of the presence of written informed consent, and only 10.5 % of the cases presented with written informed consent. Half of the cases did not have proper medical documentation and treatment planning. One-third of the cases did not document the status of the presence of diagnostic aids (OPG, Cephalometric, CBCT, PA, BW, diagnostic casts) and only 195 (22.6 %) of the cases confirm the presence of such a diagnostic aid. (Table 3) About two-third of the cases were related to prosthodontics, followed by endodontics with 58.9 % of the cases, and 40.8 % related to Orthodontics (Fig. 3).

Only in 25.8 % of the cases, the defendant was not guilty. In 35.4 % of the cases, indemnity money was paid by the defendant to the plaintiff, and 31.9 % of the cases included a financial penalty paid by the defendant to the government. The court verdict ranged from indemnity money paid to the plaintiff, reconcillation, warning to the practitioner, temporary suspension or jail (Fig. 4). Riyadh had the longest mean period trial of 7 months and the highest mean number of sessions with average of 3 sessions per case. Almadina, Dammam, and Jeddah had an average of 3 months per case (Table 4).

There was a significant difference in the mean trial period ($p < 0.001$); the central region had the longest period mean of 6.82 ± 10.49 months, while the northern region had the shortest period of 0.53 ± 4.90 months. Similarly, there was a significant difference in the mean number of court sessions ($p < 0.001$); the central region had the highest mean number of 2.61 ± 1.55 sessions per case, and both northern and western had the lowest mean number of 1.46 ± 0.57 and 1.51 ± 0.93, respectively (Table 5).

Table 2 Trials' characteristics and the average Indemnity and financial penalty paid.

Variable	N	Min	Max	Mean	SD
Trial period in months	791	0.03	69.73	3.3	7.4
Number of court sessions	798	1	11	1.9	1.2
Total Indemnity money/ blood money paid by the defendant to the plaintiff	365	500	645,000	26,297	44,739
Total Indemnity money/ blood money paid by the institution to the plaintiff	59	1000	195,000	23,356	34,622
Amount of financial penalty paid by the defendant to the government	289	200	100,000	8907	13,750
Amount of financial penalty paid by the institution to the government	72	1000	100,000	34,375	30,066
Amount of money paid for the plaintiff as Reconciliation	119	1000	165,000	14,761	20,859

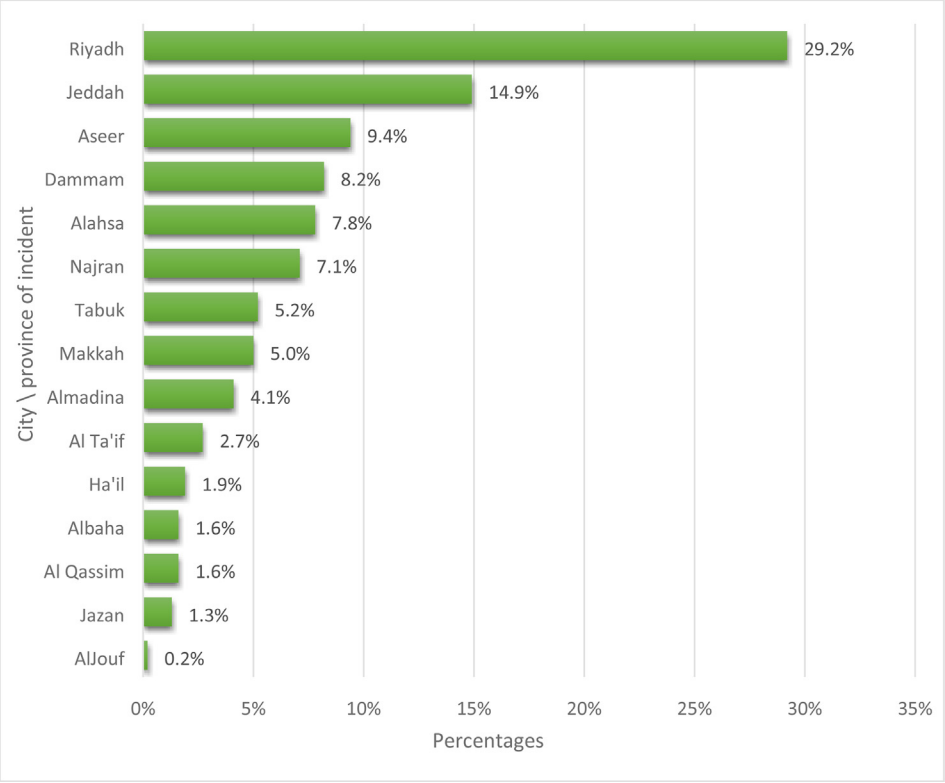

Fig. 2 Distribution of cases by the city or province of the incident.

Table 3 Case's characteristics.

Characteristics		N	%
Was the treatment done beyond the practitioner's expertise?	Yes	372	43.1
	No	476	55.1
	Not mentioned	16	1.9
Presence of written informed consent	Yes	91	10.5
	No	258	29.9
	Not mentioned	515	59.6
Presence of proper medical documentation and treatment planning	Yes	192	22.2
	No	438	50.7
	Not mentioned	234	27.1
Presence of Diagnostic aids (OPG, Cephalometric, CBCT, PA, BW, diagnostic casts)	Yes	195	22.6
	No	380	44.0
	Not mentioned	289	33.4

There was a significant difference in the mean trial period ($p < 0.001$); there was a decreasing trend in the mean trial period starting from 5.07 ± 9.58 months in 2017 to 1.55 ± 4.0 7 months in 2020. Similarly, there was a significant difference in the mean number of court sessions ($p < 0.001$); there was a decreasing trend in the mean number of sessions per case from 2.23 ± 1.77 in 2017 to 1.56 ± 0.65 in 2020 (Table 6**).**

Most of the cases (35.1 %) were male patients against a male practitioner, followed by a female patient against a male practitioner in 240 (30.7 %) of the cases, then female patients against female practitioner 192 (24.5 %). Only 76 (9.7 %) of the cases were male patients against a female practitioner (Table 7**).** There was no significant association of the defendant being guilty with patient gender or the practitioner gender (Table 8**).**

4. Discussion

It is important to emphasize the profoundly limited available research and data concerning the assessment of the prevalence and content of legal suits regarding dental malpractice in Saudi Arabia, to which only two are found separately conducted in Dammam and Riyadh. (Marei, 2013; Alanizy, Alqurashi et al., 2021) The gathered and analyzed data from 2017 until 2020 of all dental malpractice cases in Saudi Arabia that have a final verdict showed an increasing trend from 2017 to 2019, while less cases were noticed in 2020 which may be affected by the COVID-19 pandemic, as seen similarly at a recent medical publication in 2021 by Almannei. (Almannie, Almuhaideb et al., 2021) This escalating trend is clearly proportionally related to the awareness of patients of the "standard patient of care", and patient's rising tendency to claim legal rights.

The process of malpractice lawsuits involves a series of stages (AlMaani and Salama, 2021). After a malpractice incident, the first step is a communication by the plaintiff (whether the patient himself or his representative or guardian) with the health care institution, in which the malpractice occurred, or General Directorate of Health Affairs in the region according to Article (40) of Law of Practicing Health Professions Issued by the Royal Decree (Ministry of Health, 2021) The investigation is held by qualified experts as they record all personal data, signed statement of the defendant and plaintiff, and

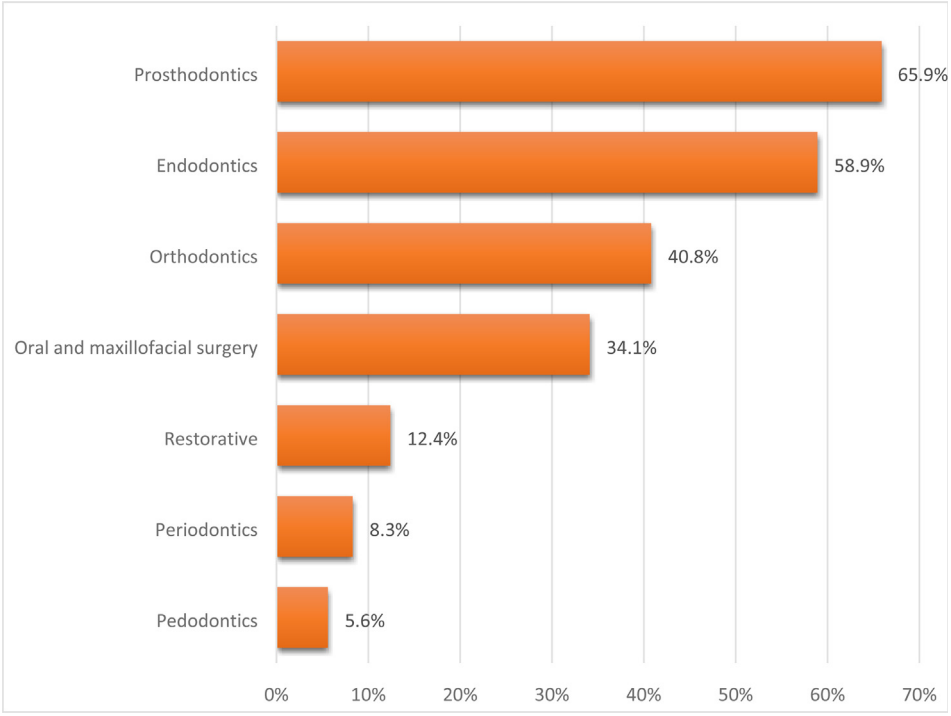

Fig. 3 The related dental specialties of the complaint.

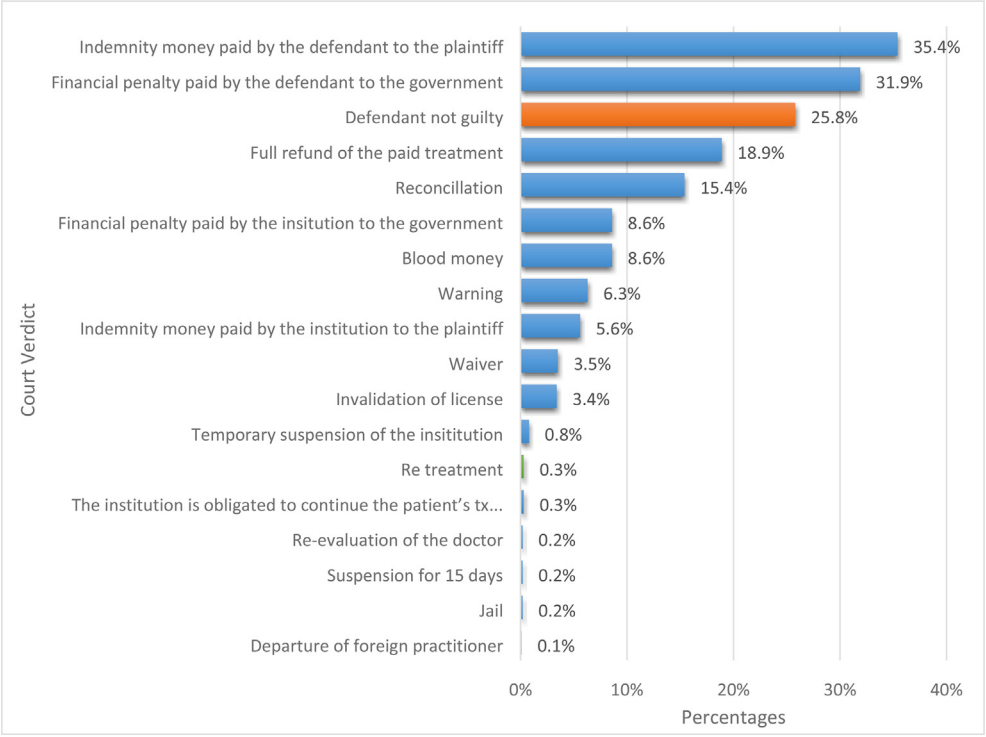

Fig. 4 Court Verdict status.

requests they desire to submit. Also, defendant and the healthcare facility which is held liable for the medical error are obligated to disclose any information, documents, medical files, reports, radiographs, receipts, and medical analysis to the investigator upon request (Al-Khaldi, 2013; Alkhenizan and Shafiq, 2018). Upon the completion of the investigation, the investigator formulates a written report including the evidence and results that have been concluded and refer the case if proven related to medical errors to the Medico-Legal Committee (Ministry of Health, 2021). Unlike the international standards

Table 4 Mean trial period and mean number of court sessions by city of the incident.

		number of court sessions		Duration in months	
		Mean	SD	Mean	SD
Riyadh	253	2.65	1.557	7.09	10.68
Jeddah	130	1.71	1.359	3.10	7.85
Aseer	79	1.7	0.667	0.85	2.30
Dammam	71	1.86	0.464	3.20	6.19
Alahsa	67	1.45	0.594	1.05	2.53
Najran	61	2.31	1.149	2.54	3.13
Tabuk	44	1.53	0.767	0.59	1.21
Makkah	43	1.05	0.316	0.16	0.85
Almadina	35	1.53	0.896	2.89	6.83
Al Taif	23	1.19	0.512	0.53	1.96
Hail	16	1.31	0.873	0.43	1.13
Albaha	14	1.08	0.289	0.03	0.00
Alqassim	14	1.75	1.138	2.43	4.02
Jazan	12	1.45	0.688	1.38	2.82
Aljouf	2	1	0	0.03	0.00
Total	**864**	**1.93**	**1.239**	**3.29**	**7.38**

Table 5 Mean trial period and mean number of court sessions by region of the incident.

		N	Mean	SD	P-value
Trial period in months (Numbers only)	Northern	61	0.53	4.90	< 0.001
	Southern	161	1.44	2.72	
	Eastern	125	2.17	1.17	
	Western	213	2.26	6.59	
	Central	231	6.84	10.49	
	Total	791	3.29	7.38	
Number of court sessions	Northern	61	1.46	0.57	< 0.001
	Western	213	1.51	0.93	
	Eastern	125	1.66	0.79	
	Southern	161	1.86	1.12	
	Central	238	2.61	1.55	
	Total	798	1.93	1.24	

Table 6 Mean trial period and mean number of court sessions by the year of case year.

Trial period in months (Numbers only)	N	Mean	SD	Minimum	Maximum	P-value
2017	102	5.07	9.58	0.03	60.0	< 0.001
2018	140	4.18	7.63	0.03	55.0	
2019	287	3.80	8.37	0.03	69.7	
2020	262	1.55	4.07	0.03	34.5	
Total	**791**	**3.29**	**7.38**	**0.03**	**69.7**	
Number of court sessions						
2017	102	2.23	1.77	1.00	9.0	< 0.001
2018	141	2.16	1.45	1.00	11.0	
2019	292	2.03	1.24	1.00	9.0	
2020	263	1.56	0.65	1.00	4.0	
Total	**798**	**1.93**	**1.24**	**1.00**	**11.0**	

of investigation of medical litigation and its consequences, the legal system in Saudi Arabia is based on the Islamic jurisprudence and the Sharia law (Ministry of Health, 2021).

This study shows that most cases were reported in Riyadh, which is expected due to the high number of dental clinics in Riyadh compared to other cities. Also, most cases were against clinics from private sector, however, it must be noted that certain governmental hospital has a separate department for patient relations that provides comprehensive protocol for complaints that can be solved before being reported to MOH. This might explain why almost 95 % of the complaints were against non-Saudi practitioners as most of the dentists in private sector (76 %) are non-Saudis as per the data from Saudi Commission for Health Specialties (SCFHS).

Table 7 Association between practitioner gender and patient gender.

Practitioner Gender		Patient Gender		Total	P-value
		Male	Female		
Male	N	275	240	515	< 0.001
	%	35.1 %	30.7 %	65.8 %	
Female	N	76	192	268	
	%	9.7 %	24.5 %	34.2 %	
Total	N	351	432	783	
	%	44.8 %	55.2 %	100.0 %	

Our study found that most of the cases (72 %) were against general dentists. The specialty most frequently involved was prosthodontics which accounts for 66 % of the cases. Findings from previous studies conducted in Peru and Tehran have also found similar findings where prosthodontics specialty was associated with the highest claims (Kiani and Sheikhazadi, 2009). However, a study in Taiwan found that the highest dental litigations were related to implant dentistry (37 %) followed by oral surgery in 25 % of the cases (Wu, Chen et al., 2022).

In regard to the gender of the plaintiff and the defendant, it was interesting to find that most of the plaintiffs (patients) were females while most of the defendants (dentists) were males. There are different explanations for this finding, one could be related to the fact that the males have a higher percentage of employment in the private dental sector (53.6 %) than females, as per the annual statistics from MOH. On the other hand, the high number of females plaintiffs is probably explained by their higher concern and interest in dental health and services (Requena Calla and Alvarado Muñoz, 2021).

One of the main factors related to treatment outcome is the practitioner's experience (Bhadauria, Dasar et al., 2018; Alshatti and AlMubarak, 2022). Hence, it was expected to find that inexperienced dentists are at high risk of dental malpractice lawsuits due to their limited experience and exposure to dental procedures, however most dentists (72 %) in the lawsuit cases had more than 10 years of experience. Experienced dentists might perform procedures with over-confidence, use of old approaches of treatment or work with poor documentation, while newly graduated dentists might perform procedures with caution.

Our study found that only 10 % of cases included a consent form, although it is mentioned in article (19) in the Law of Practicing Healthcare Professions issued by The Royal Decree in Saudi Arabia that no medical intervention can be performed without the patient's consent (Ministry of Health, 2021). This finding is believed to play a significant role in patient-practitioner coherence of clearly stating the patients' treatment plan and its complications along with their approval and autonomy. If this coherence is lost, it does in-fact lead to the increased tendency of raising complaints as reported in other studies (Lopez-Nicolas, Falcón et al., 2007; Castro, Franco et al., 2015; Nassar, Tagger-Green et al., 2021; Wu, Chen et al., 2022). It is important to mention that these few cases that had consent form signed by the patient had a verdict in favor of the dentist and played a major role in finding the dentist not guilty. Also, the presence of proper medical documentation and treatment planning would have played a role in the final verdict. Unfortunately, it is stated that 51.5 % did not have the proper medical documentation or treatment planning for either it is lost or never been documented.

In the litigations studied, it was determined that when the defendant was found guilty, the most frequent court verdict was indemnity money paid to the plaintiff. In terms of compensation, the average amount paid by the defendant to the plaintiff is 26,297 ± 44,739 SAR. The maximum compensation in this study was 645,000 SAR and was related to a case that involved oral surgery, periodontics and prosthodontics malpractice. Similarly, a study in India found that high compensations was related to oral surgery procedures with an average compensation equivalent to 93,535.07 ± 139,011.99 SAR (Thavarajah, Saranya et al., 2019). On the contrary, a study in South Africa has concluded that the most frequent verdict in 30 % of the cases (n = 61) was suspension of the dentists for a period of one month to one year, while 28 % had verdicts of compensation that are significantly less than our findings, ranging from 210 to 3141 SAR. (Nortjé and Hoffmann, 2014).

Lastly, a common overlooked reason is whether the performance of practitioners was beyond their expertise or not. The analysis showed that 45 % of practitioners were GPs that were providing treatments beyond their given limitations without timely-documented referrals to specialized practitioners due to either overconfidence, fraud or unethical overtreatment in performing complicated treatments such as advanced prosthet-

Table 8 The association of patient gender and practitioner gender with the defendant being guilty.

Patient Gender		Defendant guilty			P-value
		Yes	No	Total	
Male	Count	254	102	356	0.112
	% within Patient Gender	71.3 %	28.7 %	100.0 %	
Female	Count	338	105	443	
	% within Patient Gender	76.3 %	23.7 %	100.0 %	
Total	Count	592	207	799	
	% within Patient Gender	74.1 %	25.9 %	100.0 %	
Practitioner Gender					
Male	Count	414	148	562	0.885
	% within Practitioner Gender	73.7 %	26.3 %	100.0 %	
Female	Count	212	74	286	
	% within Practitioner Gender	74.1 %	25.9 %	100.0 %	
Total	Count	626	222	848	
	% within Practitioner Gender	73.8 %	26.2 %	100.0 %	

ics, dental implants, endodontics, orthodontics, and surgical extractions that are considered a violation of Article 9 in the Law of Practicing Healthcare Professions issued by The Royal Decree in Saudi Arabia (Requena Calla and Alvarado Muñoz, 2021).

5. Conclusion

Based on the findings of this study:

1- The number of dental malpractice lawsuits cases is rising since 2017.
2- Most cases are recorded against general practitioners, and non-Saudi dentists.
3- Riyadh and Jeddah have the highest number of malpractice lawsuit cases.
4- Good documentation, compliance to informed consent protocols and dental privileges helped practitioners to avoid being found guilty.
5- Prosthodontic and Endodontic procedures were most associated specialties in malpractice lawsuit cases.
6- The average duration for trial period is reasonable and is usually < 6 months.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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