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ASSESSMENT OF KNOWLEDGE, ATTITUDES, AND CLINICAL PRACTICES REGARDING THE USE OF ARTIFICIAL INTELLIGENCE IN PATIENT DIAGNOSIS AND TREATMENT PLANNING AMONG MEDICAL AND DENTAL PRACTITIONERS

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ABSTRACT

Background: Artificial intelligence (AI) has increasing applications in healthcare; however, its clinical adoption depends on practitioners' knowledge, attitudes, and practical experience. This study aimed to assess these factors among medical and dental practitioners regarding AI use in patient diagnosis and treatment planning.

Materials and Methods: A cross-sectional study was performed using a survey method from 1 April to 30 April 2026 with 141 medical and dental practitioners selected by convenience sampling. A structured Google Forms questionnaire was used to gather data and was analyzed descriptively and with suitable comparative tests. A p-value of < 0.05 was deemed statistically significant.

Results: Of 141 participants, 72 (51.1%) were medical practitioners and 69 (48.9%) were dental practitioners. Overall, 85.8% were aware of applications of AI, 79.4% indicated that they would be willing to use AI, and 51.8% indicated clinical use of AI. Only 30.5% had been formally trained in AI-related skills. There was a statistically significant difference between the use of AI for image interpretation in dental practitioners and medical practitioners (OES5, 47.8% versus 26.4%, $p = 0.008$). Inadequate training (73.8%) and patient privacy concerns (72.3%) were commonly reported barriers.

Conclusion: The findings indicated positive awareness and attitudes towards AI, but comparatively lower levels of clinical use and formal training. This may be supported by structured education and institutional guidance for its responsible clinical integration.

Keywords: Artificial intelligence; Knowledge; Attitudes; Clinical practice; Medical practitioners; Dental practitioners.

INTRODUCTION

Artificial intelligence (AI) is one of the most promising technologies in the modern healthcare landscape, with the potential to change how patient care and management are delivered and experienced.[1] Artificial intelligence (AI) has become one of the most transformative technologies in today's healthcare industry, presenting new avenues for improving diagnostic precision, clinical decision-making, and personalized treatment regimens.[2] AI is the technology of systems that have computers in them and are able to do things that, traditionally, humans would have to do with their brains, such as recognizing a pattern, interpreting data, predicting, and providing a recommendation for a decision.[3]

In clinical practice, machine learning, deep learning, natural language processing, and computer vision are increasingly being investigated to analyse medical records, laboratory investigations, radiological images, and clinical findings.[4] The technologies have great potential to support healthcare professionals in early disease detection, decrease misdiagnosis, forecast the prognosis for treatment, and create customized therapeutic plans.[5] In the field of dentistry, AI can be used for analyzing dental radiographs, detecting dental caries and periodontal diseases, cephalometric analysis, and orthodontic treatment planning.[6] AI's main purpose, however, is to assist, not supplant, the expertise and clinical judgment of healthcare professionals and patient-centered decision-making.[7]

Internationally, the adoption of AI in clinical practice is gaining momentum. The American Medical Association (AMA) found that 78% of physicians saw a 38% to 66% increase in the number of doctors using healthcare AI between 2023 and 2024.[8] Likewise, the increasing use of AI in dental diagnostics shows its ability to analyze and interpret radiograph images, which can assist in making more accurate diagnoses and treatment decisions.[9] However, the integration process relies not just on the availability of the technology, but also on the understanding of healthcare professionals regarding the AI systems, their trust in the results they produce, and their capacity to interpret the recommendations correctly.

The use of AI in healthcare is also emerging in Pakistan, with varying levels of awareness, confidence, and readiness among healthcare professionals. The results from a 2025 cross-sectional study of 451 medical and dental practitioners demonstrated that 74.1% were aware of the use of AI in healthcare and 72.9% were aware of AI technology. Nevertheless, 33.9% reported being confident in using AI systems, while 62.5% reported being willing to use AI in diagnosis and treatment planning. The difference in being open to AI between dental and medical practitioners was significant, with dental practitioners being more willing to adopt AI ($p = 0.004$).[10] In addition, a 2025 survey of 126 dental professionals across Pakistan revealed that 74.6% knew about AI and 77.8% knew about its applications in dentistry, but only 50% actually used it.[11] The results reveal a meaningful difference between the general knowledge of AI and the confidence in its ability to successfully integrate AI into daily clinical practice.

While some previous research has investigated attitudes and awareness of health care professionals toward AI, there is still a need to further examine the relationship between theoretical knowledge, attitudes, and clinical application, specifically in the patient diagnosis and treatment planning process, in the medical and dental fields. Once these dimensions are understood together, it may be possible to identify gaps in education, concerns for professionals and/or practical barriers, and opportunities for the responsible use of AI in clinical decision-making. Thus, the present study aimed to evaluate the awareness, attitude, and clinical practice of medical and dental practitioners regarding the use of AI in diagnosis and treatment planning of patients. Moreover, it aimed to pinpoint the disparities in awareness, acceptance, confidence, and actual use of AI among medical and dental professionals, offering insights that can inform future educational efforts, professional training programs, and policies for the safe and effective integration of AI in healthcare.

MATERIALS AND METHODS

The survey-based cross-sectional study was conducted over a one-month period from 1st April 2026 to 30th April 2026 at Fatima Jinnah Dental College, Karachi. Eligible medical and dental practitioners were contacted electronically during this period, and responses were obtained via the online survey.

The sample size was calculated using the OpenEpi sample size calculator for a single population proportion. The frequency of 62.5% was expected, based on the previous study conducted by Tariq et al. (2025), which reported that 62.5% of healthcare practitioners were willing to adopt artificial intelligence in patient diagnosis and treatment planning.[10] A 95% confidence level, an absolute margin of error of 8%, and a design effect of 1.0 were utilized. Assuming a large population, the calculated sample size was 140.68, which was rounded up to a minimum required sample size of 141 participants.

A non-probability convenience sampling technique was employed to recruit eligible medical and dental practitioners. The participants who could be accessed, professional eligibility, and willingness to participate in the study. The survey was sent out via the internet to practitioners in the public and private healthcare sectors to get feedback from both groups of practitioners.

The study involved doctors and dentists who were qualified to become doctors and dentists, MBBS or BDS, with a recognized qualification, registered by the Pakistan Medical and Dental Council (PMDC), and actively practicing medicine or dentistry during the study period. The practitioners included both public and private healthcare practitioners regardless of their prior experience with AI technologies. This was a voluntary study and only included individuals who had given informed consent. Students and house officers or interns in medicine or dentistry who were not registered as a full medical or dental practitioner, other health care professionals who were not directly involved in patient care, or medical practitioners who were only involved in academic and administrative work were not included. The final analysis excluded incomplete questionnaire responses and duplicate responses.

Data were gathered via a structured self-administered questionnaire created in Google Forms. The

questionnaire was designed to assess participants' knowledge, attitudes, and clinical practices regarding the application of AI in patient diagnosis and treatment planning. It included sections on demographic and professional information, knowledge and understanding of AI technologies, attitudes towards their clinical use, and reported usage of AI-assisted tools in everyday practice. Other questions covered the perceived benefits, concerns, barriers, and training needs for AI adoption. The survey link was shared electronically through professional WhatsApp groups, email, and other relevant online communication platforms.

The participants were informed about the purpose of the study, their voluntary participation, confidentiality, and the uses of the data they were asked to supply before answering the questionnaire. Electronic informed consent was obtained before questionnaire completion. Responses were received automatically in Google Forms and then imported into Microsoft Excel for data screening, coding, and making it ready for statistical analysis. No identifying information about patients was gathered.

IBM SPSS Statistics was used for analysis. All the collected responses were verified for completeness, consistency, and duplication prior to analysis. Descriptive statistics were used to summarise the participants' demographic information, professional background, knowledge, attitudes, and clinical practice with regard to AI. Frequencies and percentages were used to present categorical variables. The chi-square test was applied to determine the association between categorical variables and to compare responses between medical and dental practitioners. A two-sided p-value < 0.05 was used to determine statistical significance.

RESULTS

A total of 141 medical and dental practitioners were included in the analysis, comprising 72 (51.1%) medical practitioners and 69 (48.9%) dental practitioners. Most participants were aged 25–30 years (39.0%), while 54.6% were male. Most worked in private healthcare institutions (56.7%), and 41.1% of them had less than five years of clinical experience. In terms of professional qualification, 31.9% had an MBBS degree, 30.5% had a BDS degree, and the rest were postgraduates. [Table 1]

In terms of AI knowledge, 85.8% of respondents were aware of healthcare AI, and 76.6% were aware of its clinical applications. The knowledge of AI-assisted image interpretation, diagnostic decision-making, and treatment planning was 77.3%, 74.5%, and 70.2%, respectively. However, only 66.0% recognized the importance of clinician verification of AI-generated outputs, and 30.5% had received formal AI-related training. No statistically significant differences in knowledge-related responses were observed between medical and dental practitioners (all $p > 0.05$). [Table 2]

The overall sentiment among participants was positive regarding the adoption of AI in healthcare. Around 80.9% were positive about AI's accuracy in diagnosis, 77.3% were positive about its usefulness in treatment, and 83.7% were positive about its usefulness as a clinical decision support tool. In summary, 79.4% said they would be willing to use AI in clinical practice in the future, and 93.6% said clinical responsibility should be the sole duty of healthcare professionals. Some of the concerns raised included patient confidentiality, algorithmic errors, and overreliance on AI. There was no significant difference between the attitudes of the two professional groups (all $p > 0.05$). [Table 3]

Concerning clinical practices, 51.8% of respondents said they had applied AI tools in their clinical practice. The use of AI for diagnostic assessment and AI for treatment planning were 40.4% and 34.0%, respectively, and 36.9% used AI for radiographic or clinical image interpretation. Other applications involved Clinical documentation (31.2%), Clinical evidence review (39.0%) and Patient treatment explanation (29.1%). Only 23.4% reported using AI at least weekly. However, there were statistically significant differences between dental practitioners and medical practitioners for the use of AI in image interpretation (47.8% vs. 26.4%; $p = 0.008$), but not for the other clinical practices. [Table 4]

Table 1: Demographic and professional characteristics of participants (n = 141)

Variable	Category	n (%)
Profession	Medical practitioner	72 (51.1%)
	Dental practitioner	69 (48.9%)
Age group	25–30 years	55 (39.0%)
	31–40 years	52 (36.9%)
	41–50 years	25 (17.7%)
	>50 years	9 (6.4%)
Gender	Male	77 (54.6%)
	Female	64 (45.4%)
Healthcare sector	Public	61 (43.3%)
	Private	80 (56.7%)
Years of clinical experience	<5 years	58 (41.1%)
	5–10 years	49 (34.8%)
	>10 years	34 (24.1%)
Highest professional qualification	MBBS	45 (31.9%)
	BDS	43 (30.5%)
	Postgraduate medical qualification	27 (19.1%)
	Postgraduate dental qualification	26 (18.4%)

Table 2: Knowledge and awareness of artificial intelligence by profession

Knowledge item (positive response)	Medical n=72	Dental n=69	p-value
Previously heard of healthcare AI	62 (86.1%)	59 (85.5%)	0.918
Understood potential AI applications	55 (76.4%)	53 (76.8%)	0.953
Knew AI could assist image interpretation	52 (72.2%)	57 (82.6%)	0.141
Knew AI could support diagnostic decisions	54 (75.0%)	51 (73.9%)	0.882
Knew AI could support treatment planning	47 (65.3%)	52 (75.4%)	0.191
Understood that AI outputs require clinician verification	48 (66.7%)	45 (65.2%)	0.856
Received formal AI-related training	19 (26.4%)	24 (34.8%)	0.279

Table 3: Attitudes toward clinical AI applications by profession

Attitude item (agree/strongly agree)	Medical n=72	Dental n=69	p-value
Believed AI could improve diagnostic accuracy	57 (79.2%)	57 (82.6%)	0.604
Believed AI could improve treatment planning	54 (75.0%)	55 (79.7%)	0.504
Supported AI as a clinical decision-support tool	58 (80.6%)	60 (87.0%)	0.304
Expressed willingness to use AI in future	53 (73.6%)	59 (85.5%)	0.081
Trusted AI recommendations when clinician-verified	46 (63.9%)	49 (71.0%)	0.367
Concerned about overreliance on AI	50 (69.4%)	45 (65.2%)	0.593
Concerned about patient data confidentiality	55 (76.4%)	51 (73.9%)	0.734
Concerned about algorithmic bias or errors	48 (66.7%)	47 (68.1%)	0.854
Believed clinicians should retain final responsibility	67 (93.1%)	65 (94.2%)	0.781

Table 4: Self-reported clinical practices involving AI

Practice item (yes)	Medical n=72	Dental n=69	p-value
Ever used any AI-based tool in clinical work	34 (47.2%)	39 (56.5%)	0.269
Used AI to assist diagnostic assessment	26 (36.1%)	31 (44.9%)	0.286
Used AI to interpret radiographic/clinical images	19 (26.4%)	33 (47.8%)	0.008
Used AI to assist treatment planning	20 (27.8%)	28 (40.6%)	0.109
Used AI to review clinical guidelines or evidence	29 (40.3%)	26 (37.7%)	0.752
Used AI to draft clinical documentation	24 (33.3%)	20 (29.0%)	0.578
Used AI to explain treatment options to patients	18 (25.0%)	23 (33.3%)	0.276
Used AI at least weekly in clinical work	15 (20.8%)	18 (26.1%)	0.461
Verified AI outputs before clinical decisions	30 (41.7%)	36 (52.2%)	0.211

Table 5: Perceived barriers and professional training needs

Barrier or need (endorsed)	Medical n=72	Dental n=69	p-value
Lack of practical AI training	55 (76.4%)	49 (71.0%)	0.468
Limited access to validated AI tools	49 (68.1%)	44 (63.8%)	0.591
Cost of AI tools or subscriptions	43 (59.7%)	41 (59.4%)	0.971
Inadequate institutional infrastructure	45 (62.5%)	40 (58.0%)	0.583
Uncertainty about diagnostic reliability	48 (66.7%)	45 (65.2%)	0.856
Patient privacy and data security concerns	53 (73.6%)	49 (71.0%)	0.730
Unclear professional/legal accountability	46 (63.9%)	44 (63.8%)	0.988
Need for hands-on AI training workshops	61 (84.7%)	60 (87.0%)	0.704
Need for institutional guidelines on AI use	59 (81.9%)	57 (82.6%)	0.918
Need for continuing professional education	58 (80.6%)	56 (81.2%)	0.927

Table 6: Comparison of key knowledge–attitude–practice outcomes

Domain	Category	Medical n (%)	Dental n (%)
AI awareness	Aware	62 (86.1%)	59 (85.5%)
	Not aware	10 (13.9%)	10 (14.5%)
Clinical AI adoption	Ever used	34 (47.2%)	39 (56.5%)
	Never used	38 (52.8%)	30 (43.5%)
Willingness to adopt	Willing	53 (73.6%)	59 (85.5%)
	Not willing/undecided	19 (26.4%)	10 (14.5%)
Formal training	Received	19 (26.4%)	24 (34.8%)
	Not received	53 (73.6%)	45 (65.2%)

Lack of practical training (73.8%), patient privacy and data security (72.3%), and access to validated AI tools (66.0%) were reported as the top three barriers to implementing AI, while uncertainty about the diagnostic reliability (66.0%) was the fourth. Limited infrastructure, financial constraints, and lack of clarity of professional accountability were also identified as challenges. The majority of the respondents indicated a need for hands-on training workshops (85.8%), institutional guidelines (82.3%), and continuing professional education (80.9%). A comparison of medical practitioners with dental practitioners revealed no statistically significant differences in terms of barriers to practice and training (all $p > 0.05$). [Table 5]

The general comparison of major domains associated with AI showed a gap between awareness and clinical use of AI. 79.4% of respondents were willing to use AI in their practice, with 51.8% using AI in a clinical setting before and 30.5% having been formally trained, although 85.8% knew about AI. The clinical adoption rate among dental practitioners was higher than that of medical practitioners (56.5% vs 47.2%), as was the willingness to adopt AI (85.5% vs 73.6%).

These results revealed a gap between the awareness, willingness, formal training, and reported implementation of AI in clinical practice. [Table 6]

DISCUSSION

This study aimed to explore the knowledge, attitudes, and clinical practices of both medical and dental practitioners regarding the use of artificial intelligence (AI) in the diagnosis and treatment planning of patients. The results indicated that the majority of the participants were familiar with the use of AI in healthcare (85.8%) and were interested in using AI in healthcare practice (79.4%). The reported clinical utilization, however, was comparatively lower (51.8%) and formal training (30.5%). The results were in general harmony with that of Tariq et al. (2025) who conducted a survey among 451 medical and dental practitioners of Pakistan and found that 74.1% were familiar with AI applications, 62.5% were prepared to use AI tools in diagnosis and treatment planning and 33.9% felt confident in using an AI system.[10] While the current estimates for awareness and willingness were higher, both studies showed that there was a gap between awareness of AI and readiness for its clinical use. These percentages should be interpreted with caution due to the differences among participants, instruments used, and sampling methods.

In terms of knowledge of AI, 77.3% and 74.5% of the participants in the current dataset indicated their understanding of using AI for image interpretation and diagnostic decision making, respectively, while 76.6% indicated their understanding of the clinical applications of AI. A cross-sectional survey of doctors and medical students in Pakistan was conducted by Ahmed et al (2022), who also explored the status of knowledge, attitudes and practices regarding AI, giving a more earlier national insight into the awareness of doctors about the professional-use of AI.[12] In the same vein, a nationwide survey was conducted in 2024 to explore the knowledge, awareness, and practices of healthcare professionals regarding AI.[13] The present findings are relevant in the light of these studies, but the differences in the professional population and the items included in the questionnaires make such direct comparison of the knowledge measures as used in these studies impossible.

Likewise, the current results indicated a mostly positive opinion on AI: 80.9% of respondents said it could help to improve the diagnostic accuracy and 77.3% said it could contribute to treatment planning. The findings were similar to the study conducted by Gowdar et al. (2024) on 200 dental students and private dental practitioners in Saudi Arabia. Their study found that 68% of them knew of the use of AI in dentistry, and 87% thought that AI could help with radiological diagnosis.[14] Likewise, Abdullah et al. (2025) conducted a study with 400 faculty members of dental departments in Pakistan and found that the overall attitudes toward AI were positive, with a mean attitude score of 3.5 ± 0.61, even though they lacked much knowledge about the advanced concepts of AI.[15]

In the current dataset, however, clinical use was less common than positive beliefs, with 40.4% reporting that they use AI for their diagnostic evaluation and 34.0% for their treatment planning. In Singapore, Quah et al. (2025) found that 72.9% of 48 oral and maxillofacial surgery clinicians and trainees believed that AI could be useful in diagnosis and treatment planning, but 62.5% had not integrated AI into clinical practice.[16] Likewise, a nationwide survey of 1,137 Chinese doctors published in 2026 revealed favorable attitudes among 90.9% of the respondents, while just 28.8% practiced well with AI.[17] The results of this study were similar to the descriptive difference between favourable attitudes and reported use in the present study. However, the definition of clinical practice varied across the studies, and the percentages found cannot be directly converted between each other.

When comparing AI use between medical and dental practitioners, higher reported usage of AI was among dental practitioners, specifically in image interpretation (47.8% versus 26.4%, $p = 0.008$). This result agreed with Tariq et al. (2025) who found higher levels of dental practitioners' willingness and confidence. The present analysis however did not demonstrate statistically significant differences for most other clinical indications.[10] According to a 2026 survey of 300 dental professionals in Kuwait, 56.3% were familiar with AI tools tailored for dental care, while 15.7% had employed AI-supported tools.[18] The modest uptake in that study was an example of the fact that the uptake level could be significantly different in different professional contexts.

Additionally, issues concerning patient confidentiality, diagnostic accuracy, and reliance on AI were also noted in the current study. The results were similar to a 2025 survey of doctors in Saudi Arabia, which found that 82.1% of respondents said they trust AI in clinical decision-making, but just 25.9% reported using it in the last year. That study found lack of training, cost of implementation, privacy concerns, algorithmic bias, and professional liability as barriers to adoption.[19] Similarly, Quah et al. (2025) found that 77.1% of participants were concerned about misdiagnoses or misguided treatment strategies and 70.8% of participants felt they were overly reliant on AI. The comparisons indicated that positive attitudes were possible, along with doubts about clinical reliability and professional responsibility.[16] The present survey, however, did not assess the accuracy or safety of the recommendations given by AI, and did not allow any conclusions to be drawn about their actual clinical performance.

The need for professional training was clearly evident in the current dataset, as 85.8% of them agreed on hands-on workshops, and 80.9% agreed on continuing professional education. These were in line

with a study of 4,596 medical, dental, and veterinary students conducted in 48 countries in 2024. This study found that 76.3% did not have any AI-related courses and that the participants overall did not think they were adequately prepared to use AI professionally, despite positive attitudes towards its use.[20] Abdullah et al. (2025) similarly found that 81% of Pakistani dental faculty members recognized the need for additional AI learning opportunities.[15] While these studies did not focus only on practicing clinicians, they did support the importance of relevant, structured education on AI as a professional development priority.

The present study had several limitations. The cross-sectional design did not allow for causal conclusions to be drawn, and selection bias may have occurred through convenience sampling techniques and distributing questionnaires online. They might have been more inclined to answer because of their interest in AI. Knowledge, attitudes, and clinical practices were self-reported, and the study did not independently assess participants' technical proficiency, the accuracy of AI-assisted diagnoses, or patient treatment outcomes. In addition, the precision and generalizability of the estimates were restricted by the relatively small sample and subgroup comparisons. In the range of limitations, a positive attitude toward AI was reported, with lower rates of clinical use and formal training.

CONCLUSION

The findings of the present study indicated that the medical and dental practitioners exhibited positive knowledge and attitudes regarding the use of AI in diagnosis and treatment planning for patients. The clinical application of AI and formal training on AI, however, were limited. Dental practitioners reported greater use of AI for clinical image interpretation, while most other comparisons between the professional groups were not statistically significant. Frequent barriers were inadequate training, lack of confidence in the reliability of diagnostic measures, and patient data confidentiality. The results indicated that formal professional education, institutional supervision and suitable protection are crucial for the responsible use of AI tools in clinical work.

REFERENCES

1. Alowais, S.A., et al., Revolutionizing healthcare: the role of artificial intelligence in clinical practice. BMC medical education, 2023. 23(1): p. 689.
2. Noorbakhsh-Sabet, M.N., P.Y. Zhang, and P.V. Abedi, Artificial intelligence transforms the future of health care. The American journal of medicine, 2019. 132(7): p. 795-801.
3. Nwadiugwu, M.C., Neural networks, artificial intelligence and the computational brain. arXiv preprint arXiv:2101.08635, 2020.
4. Avanzo, M., et al., The evolution of artificial intelligence in medical imaging: from computer science to machine and deep learning. Cancers, 2024. 16(21): p. 3702.
5. Akhtar, Z.B., Artificial intelligence within medical diagnostics: A multi-disease perspective. Artificial intelligence in Health, 2025. 2(3): p. 44-62.
6. Khanagar, S.B., et al., Developments, application, and performance of artificial intelligence in dentistry–A systematic review. Journal of dental sciences, 2021. 16(1): p. 508-522.
7. As' ad, M., N. Faran, and H. Joharji, AI-supported shared decision-making (AI-SDM): conceptual framework. JMIR AI, 2025. 4: p. e75866.
8. Khan, A., The Role of Artificial Intelligence in Optimizing Healthcare Administration and Resource Allocation in the United States. Journal of Computational Systems & Engineering Insights, 2025. 3(01): p. 42-61.
9. Khalifa, M. and M. Albadawy, AI in diagnostic imaging: revolutionising accuracy and efficiency. Computer Methods and programs in biomedicine update, 2024. 5: p. 100146.
10. Tariq, K., et al., Attitudes and readiness to adopt artificial intelligence among healthcare practitioners in Pakistan's resource-limited settings. BMC Health Services Research, 2025. 25(1): p. 1031.
11. Islam, S.A., et al., Knowledge and Opinions of Dental Practitioners for the Use of Artificial Intelligence (AI) in Dentistry: Artificial Intelligence in Dentistry. Pakistan Journal of Health Sciences, 2025: p. 16-21.
12. Ahmed, Z., et al., Knowledge, attitude, and practice of artificial intelligence among doctors and medical students in Pakistan: A cross-sectional online survey. Annals of medicine and surgery, 2022. 76: p. 103493.
13. Qadri, H.M., et al., Knowledge, awareness and practice of artificial intelligence and types of realities among healthcare professionals: a nationwide survey from Pakistan. Cureus, 2024. 16(4).
14. Gowdar, I.M., et al., Artificial intelligence and its awareness and utilization among dental students and private dental practitioners at Alkharj, Saudi Arabia. Journal of pharmacy & bioallied sciences, 2024. 16(Suppl 3): p. S2264.
15. Abdullah, S., et al., Exploring dental faculty awareness, knowledge, and attitudes toward AI integration in education and practice: a mixed-method study. BMC Medical Education, 2025. 25(1): p. 691.
16. Quah, B., et al., Knowledge, attitudes, and practices of oral and maxillofacial surgeons towards the use of artificial intelligence in clinical practice and training: a cross-sectional study. Frontiers in Oral Health, 2025. 6: p. 1630995.
17. Chen, Z., et al., Knowledge, attitudes, and practices toward artificial intelligence in medicine among Chinese physicians: A cross-sectional study from January to March 2024 with analysis of influencing factors. International Journal of Medical Informatics, 2026. 216: p. 106476.
18. Ali, K., et al., Awareness, attitudes, and barriers toward artificial intelligence in dentistry: A cross-sectional survey of dental professionals in Kuwait. Dentistry Journal, 2026. 14(10): p. 618.
19. Alhazmi, F., Understanding Physician Attitudes Toward AI in Clinical Decision-Making: Cross-Sectional Study. JMIR Form Res, 2025. 9: p. e79730.
20. Busch, F., et al., Global cross-sectional student survey on AI in medical, dental, and veterinary education and practice at 192 faculties. BMC medical education, 2024. 24(1): p. 1066.