RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING USE OF CHATGPT AMONG DENTAL UNDERGRADUATE STUDENTS OF AMC DENTAL COLLEGE

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Background: The accelerated adoption of artificial intelligence (AI) in healthcare education has highlighted ChatGPT's potential to improve dental learning and research through case-based reasoning, tutoring, and ethical advice.

Methods: In April–May 2025, a cross-sectional questionnaire survey was conducted in all third-- and final-year BDS students of AMC Dental College (n = 135). A 15-item online validated questionnaire measured knowledge (4 items), attitudes (6 items), and practices (5 items) toward ChatGPT. Descriptive statistics presented response frequencies; correlations among demographic subgroups and KAP areas were assessed through chi-square tests with $\alpha = 0.05$.

Results: All 135 participants completed the survey (100% response). Previous awareness of ChatGPT was reported by 133 students (98.5%), and 123 (91.1%) were aware of its capabilities. Academic use was reported by 117 (86.7%), of whom 72 (53.3%) used it often. Ninety-five percent (n = 115) concurred that ChatGPT enhanced their knowledge of dental principles, and 113 (83.7%) indicated interest in official training. Users who used it often were significantly more likely to report academic enhancements ($\chi^2(1)=28.2$, $p < 0.001$) and future use intent ($\chi^2(1)=8.79$, $p = 0.001$).

Conclusion: AMC Dental College students exhibit significant levels of awareness of ChatGPT, positive attitudes towards its educational utility and frequent use, justifying the necessity for structured AI integration, training modules, and ethical principles in the dental curriculum.

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Introduction:-

Chat generative pre-trained transformer (ChatGPT) is a new age artificial intelligence chat bot which uses natural language processing to respond to the human input conversationally. ChatGPT has many applications in the healthcare system, including dentistry. It can be used for diagnosing many different diseases with their differential diagnosis, assessing the risk of disease, and scheduling patient appointments [1].

The upcoming decade will determine whether the AI applications like ChatGPT will meet the high expectations or if there will be just another AI winter. This is especially true in healthcare, where there are a lot of concerns regarding data security and the use of computers and artificial intelligence for making key medical decisions like diagnosis and treatment modalities. Despite the reservations, AI can transform the healthcare system and improve dental care [2]. This research proposal aims to explore the knowledge, attitude, and practice regarding ChatGPT use among the dental undergraduate students of AMC Dental College. By assessing the ChatGPT usage in dental studies, this study seeks to identify the trends, challenges, and opportunities [3].

It also explores student perceptions and attitudes toward integrating ChatGPT into their academic endeavors and its potential use for future learning and practice in dentistry. ChatGPT can provide help in various services for education, healthcare providers, and patients. For the students, it can also offer guidance and tutoring by analyzing different standard textbooks and articles also can be used to clarify complex ideas, and act as a teaching tool to revolutionize learning in biomedical science [4,5].

ChatGPT can assist our healthcare system personnel in dentistry and healthcare with h e l p in diagnosis, decision-making, new age digital data recording, image analysis, disease prevention and treatment, reducing treatment, increasing awareness regarding masses, reducing mishaps and supporting upcoming research [6]. However, it also raises limitations and ethical issues like integrity, credibility and plagiarism [7].

The novelty and potential of ChatGPT in dental education and research require understanding the factors influencing its acceptance and awareness. Researching dental students' attitudes will provide insights into the benefits, technology preparedness, and ethical concerns about using ChatGPT responsibly. This study aims to assess the knowledge and attitudes of dental professionals regarding the use and adoption of ChatGPT for its better use.

OBJECTIVES:

This cross-sectional study's primary goal is to assess the knowledge, attitudes, and practice (KAP) of AMC Dental College's third- and final- year undergraduate students regarding use of ChatGPT. In addition to the self-reports of effects on academic performance, time efficiency and collaborative learning behaviors, this study specifically evaluates students' attitudes toward ChatGPT's educational utility and preparedness for formal training sessions, as well as their knowledge regarding ChatGPT's core capabilities and ethical implications in academic and clinical settings. Further, this study attempts to investigate KAP outcome relationships with demographic variables, including such as identifying barriers and facilitators to ChatGPT uptake adoption and the formulation of evidence-based policy recommendations for integrating AI tools such as ChatGPT into dental education through various strategic workshops, programs and ethical policies.

METHODOLOGY:

Following approval from the Institutional Review Board at AMC Dental College, Ahmedabad, a study was conducted via an online survey from April to May 2025. This study employs a cross-sectional questionnaire-based design to evaluate students' knowledge, attitudes, and practices concerning ChatGPT. 135 students from AMC Dental College responded to a google form questionnaire. The online validated questionnaire was distributed to students through social networking platforms. The results were tabulated and presented as percentages.

StudyDesignandParticipants

This was a cross-sectional questionnaire-based study carried out among dental undergraduate students in third or final year at AMC Dental College. The inclusion criteria were enrollment in the third and final year and willingness to participate; first and second year students were excluded. Sample size (n=135) was calculated using Cochran's formula with e=0.05, p=0.5, and allowing for 5% attrition.

DataCollectionandAnalysis

Data were gathered using a self-administered, structured, validated online questionnaire of 15 closed-ended questions, divided into three domains:

- Knowledge(4items): Awareness of ChatGPT's existence, features, seminars at-tended, and ethical considerations.
- Attitude(6items): Perceived educational value, accuracy, comparability to other tools, supportiveness, and willingness for further training.
- Practice(5items): Frequency of use, impact on performance, time efficiency, peer/teacher consultation, and future usage intent.

The questionnaire link was distributed via social networking platforms. Responses were tabulated and presented as percentage.

RESULTS:
KnowledgeandAwareness

Most students (133/135, 98.5%) reported having heard of ChatGPT, and 123 (91.1%) were familiar with its features (Table 1).In contrast, only 23 (17.0%) had attended seminars on AI or ChatGPT in dental education, and 58 (43.0%) were aware of potential ethical considerations (Table 1).These results are also illustrated in Figure 1.
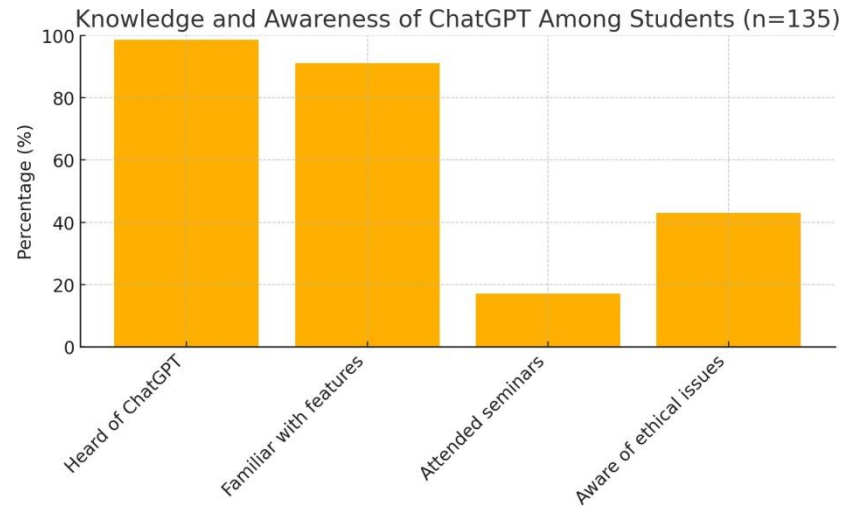

Figure 1: Students' knowledge and awareness of ChatGPT.

Table1: Distribution of knowledge and awareness responses (N=135).

Question	Yes (%)	No (%)
Heard of ChatGPT	133 (98.5%)	2 (1.5%)
Familiar with features	123 (91.1%)	12 (8.9%)
Attended seminars	23 (17.0%)	112 (83.0%)
Aware of ethical issues	58 (43.0%)	77 (57.0%)

AttitudesTowardChatGPT

Attitudinal responses were generally positive. A large majority of students agreed that ChatGPT enhances their understanding of dental concepts (108/135, 80.0%), with 106 (78.5%) believing it could better support their education (Figure 2). Ninety-one students (67.4%) found ChatGPT accurate and responsive, while 84 (62.2%) considered it more effective than alternative tools. Furthermore, 113 (83.7%) expressed interest in training sessions to optimize its use.
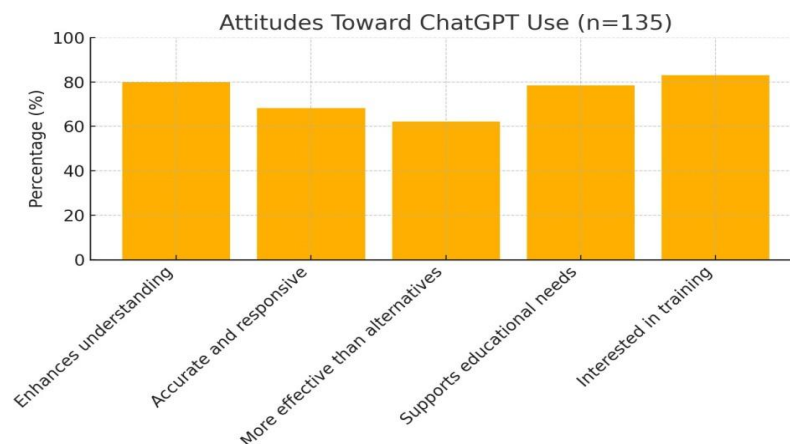

Figure 2: Students' attitudes toward ChatGPT use.

Table2: Distribution of attitude responses (N=135).

Question	Yes (%)	No (%)
ChatGPT enhances understanding of dental concepts	108 (80.0%)	27 (20.0%)
ChatGPT is accurate and responsive	91 (67.4%)	44 (32.6%)
ChatGPT is more effective than alternative tools	84 (62.2%)	51 (37.8%)
ChatGPT supports educational needs	106 (78.5%)	29 (21.5%)
Interested in further training sessions on ChatGPT	113 (83.7%)	22 (16.3%)

Practice and Usage

Regarding practice, 117 (86.7%) students reported having used ChatGPT for educational purposes, but only 72 (53.3%) used it frequently (Figure 3). Over half of the respondents (70,51.9%) noticed improvements in academic performance when using ChatGPT, and 114 (84.4%) found it to be a time-efficient information resource. Post-response discussions were engaged in by 74 students (54.8%), and 108 (80.0%) stated they would consider using ChatGPT as a study aid in the future
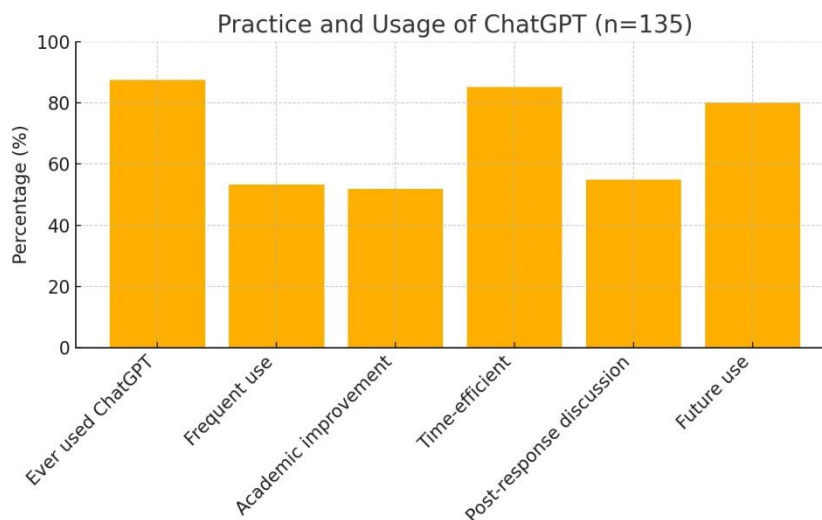

Figure 3: Students' practices regarding ChatGPT use.

Table 3: Distribution of practice responses (N=135).

Question	Yes (%)	No (%)
Have you ever used ChatGPT	117 (86.7%)	18 (13.3%)
Frequent use	72 (53.3%)	63 (46.7%)
Academic improvement	70 (51.9%)	65 (48.1%)
Time-efficient	114 (84.4%)	21 (15.6%)
Post-response discussion	74 (54.8%)	61 (45.2%)
Future use	108 (80.0%)	27 (20.0%)

Overall KAP Summary

Overall, 46.7% of students demonstrated sufficient knowledge (≥3/4 correct), 90.4% a positive attitude (≥ 3/6), and 72.6% good practice (≥ 3/5) of ChatGPT-supported learning (Fig. 4).
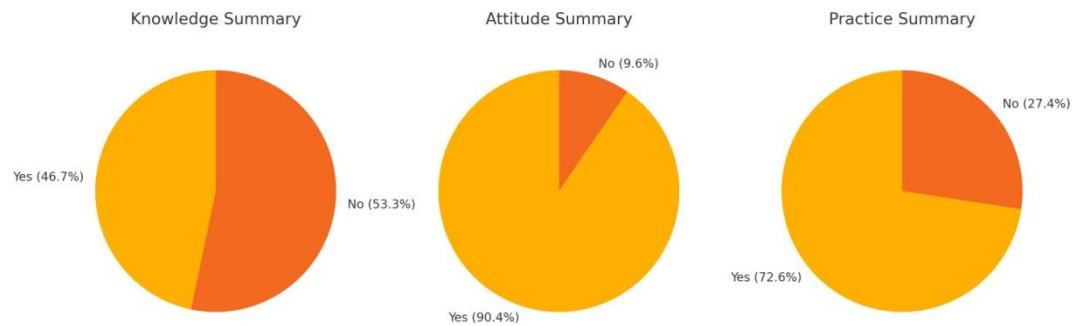

Figure4: Overall KAP Summary: proportion of students meeting KAP thresholds.

Associations Among Variables

Chi-square analysis revealed several significant associations (Table 4). Students familiar with ChatGPT features were more likely to have used it ($\chi^2(1)$ =6.02, p=0.002). Prior use of ChatGPT was strongly associated with frequent use ($\chi^2(1)$ =22.78, $p<0.001$) and with reporting academic improvements ($\chi^2(1)$ = 11.41, p <0.001). Attendance at AI/ChatGPT seminars was positively associated with awareness of ethical issues ($\chi^2(1)$ = 6.03, p=0.018) and with having used ChatGPT ($\chi^2(1)$ =3.06, p=0.039). Students who believed ChatGPT supports their education were much more likely to plan future use ($\chi^2(1)$=28.3, $p<0.001$). Frequent users were more likely to report academic improvements ($\chi^2(1)$ = 28.2, $p<0.001$) and to intend future use ($\chi^2(1)$ = 8.79, p= 0.001). In contrast, awareness of ethical issues alone was not significantly associated with prior usage ($p>0.05$).

Table4: Chi-square analysis of associations between variables.

Comparison	$\chi^2(1)$	p-value
Familiarity vs. Prior use	6.02	0.002
Prior use vs. Frequent use	22.78	<0.001
Prior use vs. Improvement	11.41	<0.001
Seminar vs. Ethical awareness	6.13	0.018
Seminar vs. Prior use	3.06	0.039
Support vs. Future use	28.3	<0.001
Frequent vs. Improvement	28.2	<0.001
Frequent vs. Future use	8.79	0.001

DISCUSSION:

ChatGPT is a new emerging AI tool which is taking the world by storm, from turning images into Ghibli art to giving easy-to understand solutions to complex questions. The new world towards which we are progressing is driven by artificial intelligence and the need of the hour is to understand and accept the new normal of artificial intelligence, the impact of ChatGPT can be seen almost everywhere where there is a need to work with creativity and efficiency. The upcoming decade will most likely be the decade of AI and the individuals skilled in it will thrive.

In this research conducted among the 135 surveyed students, 98.5% of them knew of ChatGPT and 91.1% knew of its features, but only 17.0% had participated in seminars regarding ChatGPT and 43% knew of It' s associated ethical concerns. Most concurred on its educational benefits: 80.0% reported that ChatGPT facilitates better understanding of dental procedures and 78.5% said it aids in their studies, while 67.4% described it as accurate and responsive and 62.2% considered it as more useful than the alternative tools. Furthermore, 83.7% of the students expressed interest in ChatGPT further training. In practice, 86.7% employed ChatGPT for educational purposes, although only 53.3% did this often; 51.9% reported learning improvements from its use, and 84.4% rated it as a time-saving source of information. In addition, 54.8% took part in post-response discussions and 80.0% intended to use ChatGPT as a study help in the future. Such findings highlight a disparity between enthusiasm and depth of knowledge.

In dental education assessment, research by Shete et al. (2024) [8] indicates ChatGPT's potential in knowledge-based tasks, but points towards limitations in critical thinking and processing visual material. This also reflects in our result of lower adequate levels of knowledge (46.7%), indicating that even when there is good attitude and practice, deeper conceptual understanding may be lacking. Having noted these limitations, however, researchers assert the potential use of ChatGPT in tailored learning and simulations (Sheteetal.,2024). The strong interest in additional training (83.7%) in our research shows a wish to capitalize on these advantages [2].

Integrating ChatGPT is however challenging, especially concerning academic dishonesty and over-dependence (Ahmed, 2024; Pallivathukaletal.,2024 [9]). Our results of high practice with lower knowledge imply a risk of superficial engagement. Ethical issues, such as misinformation and absence of credible attributions [1, 10], are also Essential in healthcare. Patient data privacy is a second important issue as LLMs (Large Language Models) enter clinical environments [1].

Quite to the contrary, Roganovi´c et al. (2023) [11] had conducted are search survey on final-year dental students and working dentists in Belgrade (Serbia) and reported mere 7.9% knowledge among the participants. These discrepancies most probably reflect the differences in the digital literacy, institutional exposure and cultural attitudes toward AI in education.

Limitations:

Although this research provides valuable insights regarding the use of ChatGPT, it has few limitations. First, its cross-sectional design only records the attitudes and behaviours at a particular moment in time and cannot measure the trends over time. Second, since data are obtained by means of self-reported questionnaires, participants may introduce recall bias or respond in a way that they believe are more socially acceptable, which will impact on the accuracy of reported knowledge and usage. Third, the population is restricted to students in AMC Dental College and might limit the generalizability of results across other dental schools with various curricula or populations of students. Fourth, with the rapid developments in AI, ChatGPT capabilities could shift rapidly, making results based on the version existing at the time of study might not fully apply to the future versions. Lastly, the application of standardized questionnaires with Yes/No and Likert-scale items might not be able to capture the complete intricacy of student experiences; qualitative follow-up research (e.g., interviews or focus groups) might provide more insight.

FutureDirections

Future research can explore targeted usage patterns and barriers among specific students. Building evidence-based approaches for ethical and responsible integration of ChatGPT in the curriculum is crucial and can be executed through several different CDE programs and workshops targeting dental students. Longitudinal studies will enable researchers to look at long-term effects on skills and learning. Building on suggestions by recent commentators [12], institutions will need to invest in AI literacy, redesign curricula to promote critical interaction with AI outputs, and provide open, reflective use of ChatGPT and other emerging technologies are changing fast, so there will be periodic re-assessment needed. In addition, the performance and attitudes observed here may differ with the Increased integration of AI in education and broader shifts in digital literacy.

CONCLUSIONS:

Most of the AMC Dental College under graduates are aware of Chat GPT and holds a positive attitude toward its educational utility, with a high interest in the formal training regarding it's right use. The use of ChatGPT is fairly common and many students have reported perceived academic benefits and plan to continue using it in future. Significant associations between familiarity, usage frequency, and perceived benefits suggest that the increased exposure (e.g. through workshops and various programs) may reinforce its adoption and efficacy.

However, many students lack formal instruction or guidance on the effective use, highlighting the need for educational initiatives to integrate ChatGPT responsibly into the curriculum.

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