

**REVIEW IS CHATGPT A BLESSING OR GAMECHANGER FOR PROFESSIONALS IN
HEALTHCARE AND ORAL CARE?**

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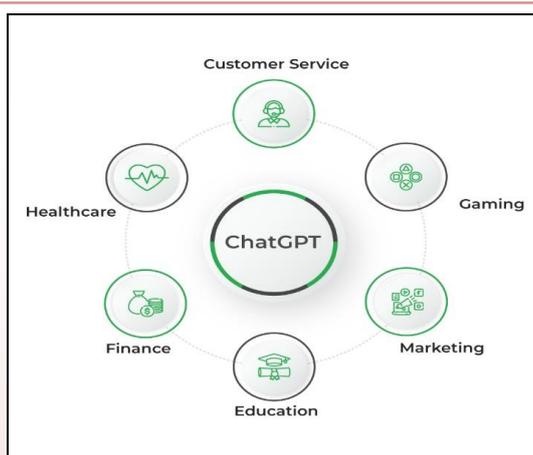


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ABSTRACT

Introduction- As dental field is progressing, so are its diagnosis and treatment options. ChatGPT has a significant role in healthcare, medical, dental, nursing and related paramedical fields. Aim- To shed light on role of ChatGPT and its applications in health concerned areas. Body- This review article enlightens the information related to ChatGPT and the way it is changing healthcare conditions of medical, dental, nursing and paramedical areas. The need of the hour is to judiciously use ChatGPT. The medical or dental doctor or nurse or paramedic can utilize this exclusive tool for the benefit of the patients. ChatGPT has been seen to be helpful in all healthcare situations, dental is no exceptional. Here ChatGPT can be of use in oral diagnosis and treatment, also in other specialities as prosthodontics, oral surgery, orthodontics and endodontics. If the dentist can use this feature to the fullest, then both patient and the dentist will benefit. By this review, an effort is made to enlighten about ChatGPT and make it a blessing/ gamechanger indeed. However, some drawbacks are also seen in ChatPT which have to be dealt aptly. Conclusion- Healthcare professionals specially dentists should try to include ChatGPT in practice, though it's not mandatory. More study in this option has to be done, still. As it is a new tool, efforts have to be made so as to achieve more gains in this regard. However, healthcare professionals cannot solely depend on ChatGPT outcomes as it is not so authentic yet. The ultimate decision remains with the healthcare professional, so now the ball is in the court of the healthcare professionals as to make this ChatGPT a blessing or gamechanger in healthcare specially dental.

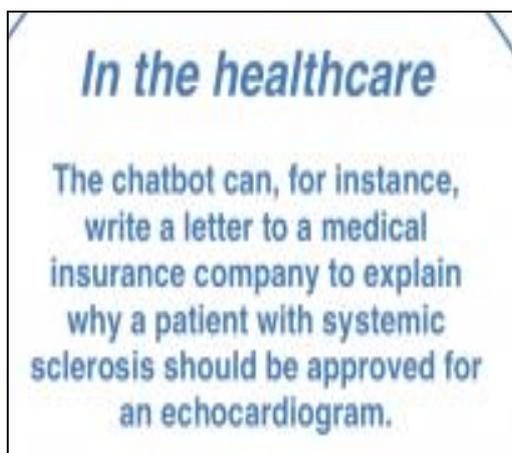
KEYWORDS: ChatGPT, Oral, healthcare.



INTRODUCTION

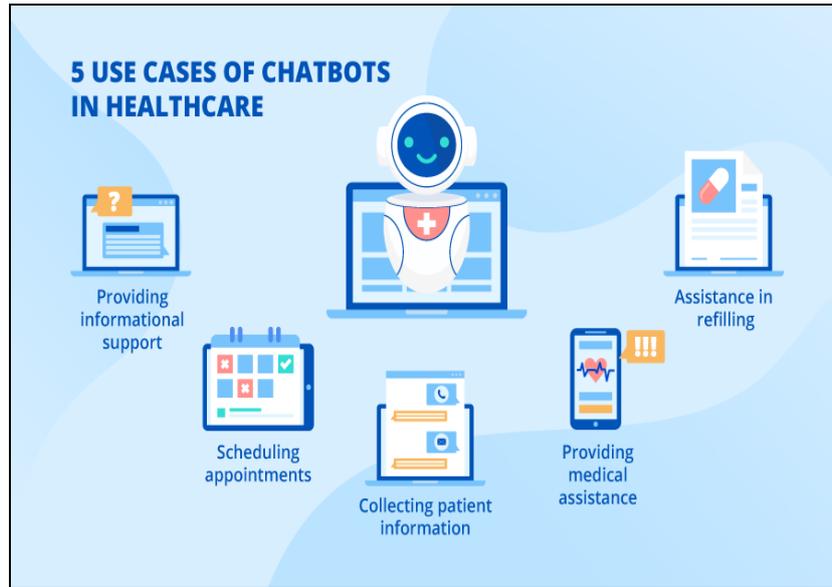
Each day is a new day of learning. This is technology age where daily we witness some new big thing as ChatGPT. ChatGPT can transform healthcare as it can optimize workflow and reduce documentation plus costs. Also it can create novel opportunities for problem based learning/ digital education (e-learning) and digital literacy.^[1] Also it has some drawbacks that include- it leads to biased content, has ethical/legal concerns, lack of transparency, risk of academic dishonesty and

research fraud. ChatGPT has applications in healthcare-medical, dental, pharmacy and related paramedical fields. It is capable of passing exams like U.S. Medical licensing exams(USMLE), ophthalmology exam for PGs, parasitology exam for medical students and life support exam by American Heart Association(AHA). ChatGPT adoption in medical, dental, pharmacy and public health education has promising prospects but it has to be guided by evidence- based results to address some shortcomings in healthcare education process.^[2]



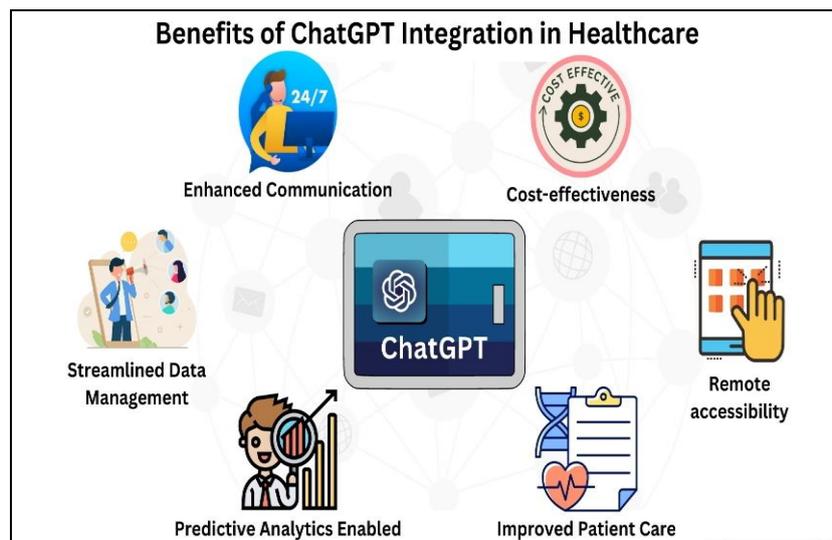
It has been a topic of innovation and conversation ever since it was introduced in November 2022. It has various medical applications as identifying research topics, assisting in clinical and laboratory diagnosis, providing updates and new developments to healthcare professionals. Also it provides development of virtual assistants for patients' health management. ChatGPT can augment the response to pandemics or the integration with the global burden of disease to come up with a model to help in clinical and translational medicine.^[3]

With ChatGPT, precautions should be taken to protect against potentially dangerous uses, such as bypassing expert medical advice. It has to be conveyed to users that the model outputs do not constitute or replace expert clinical consultation. It is essential that developers, scientists, ethicists, healthcare professionals, providers, patients, advocates, regulators and government agencies- all get involved with ChatGPT within a constructive and alert regulatory environment.^[4]



It is to be noted that applications are carried out in a laboratory environment by providing ChatGPT question samples and none of the reviewed publications have reported an actual deployment of ChatGPT in clinical settings. Also ChatGPT's qualification as a medical consultant remains to be further evaluated.^[5] ChatGPT can also be used^[6] to help medical students, doctors, nurses, and all members of the healthcare fraternity alike to know about updates and new developments in their respective fields and can also be used as a tool of assessment to assess clinical skills thus playing a pivotal role in medical education.

It can be used as a powerful tool to increase health literacy, especially among students and young adults.^[7] ChatGPT is generative pre-training transformer. It is a large language model(LLM) developed by open AI. It has shown some innovation in NLPs (Natural language Processing), which is a field of artificial intelligence(AI) that focuses on interactions between computer models and the human interactions. It has potential applications in dentistry including- providing dental health information, dental education, personalized patient care, scheduling and billing services, diagnosis, treatment planning and patient monitoring.^[8]



It supports decision-making, digital data recording, analyzes images, prevents diseases, treats diseases, reduces number of treatment mishaps and enables exploration research. These applications thus enhance patient empowerment and independence, raise service effectiveness and safety, enhance sustainability, expand access to and quality of care or empower and enable patients.^[9,11] ChatGPT, built upon GPT-4, has interested

scientists and engineers because of its impressive human conversational response as a chatbot.^[12] ChatGPT breakthroughs mode and incorporates conversation to dynamically capture multiple sources of existing knowledge for question answering so this human friendly feature facilitates dental diagnosis and oral digital health.^[13,17]

AI has some applications in Prosthodontics as in implant-supported prostheses, maxillofacial prosthetics, computer-aided design and computer-aided manufacturing (CAD-CAM) and fixed also removable prosthodontics.^[18] It is a useful tool for implant type recognition, implant success prediction, and implant design optimization.^[19] It was observed that ChatGPT is suitable to effectively recognize and accurately rectify special dental terminologies. Also it indicates that ChatGPT can be a valuable writing assistant to help dental students with essay writing. It was investigated that ChatGPT generated test questions to gauge their

utility in assisting dental students in test preparation and those questions held potential value for students.^[20]

According to previously published studies, ChatGPT has demonstrated its effectiveness in helping scholars with the authoring of scientific research and dental studies. ChatGPT cannot take a dentist's place as clinical practice involves more than just making diagnosis, also clinical findings and individualized patient care. Ultimately a dentist must make the decision as this is a field that involves several disciplines and branches.^[21] ChatGPT is a strong technology and AI language model that can improve dentistry and dental research.^[17,22,23]

Use Cases of ChatGPT in Healthcare	
Use Cases	Description
EHR documentation	Assist physicians in filling out EHR forms, drafting physician notes, and writing referrals.
Patient communication	Enable ChatGPT to respond to patient questions, reducing the burden on physicians for every query.
Administrative tasks	Utilize ChatGPT for tasks like appointment scheduling, prescription renewals, and generating billing codes.

ChatGPT can enhance dentist-patient communication, can answer dental related questions, address patient concerns promptly, ultimately increasing patient satisfaction. It is a valuable source of education and can help patients to make informed decisions about dental health and healthy oral care habits. It assists in scheduling patient appointments, based on symptoms thus it's time saving for dental professionals.^[24]

It can be useful for dental students to better understand dental concepts, improve communication skills, enhance writing abilities and problem-solving skills. Faculty members also benefit by improved teaching, assessment and collaboration.^[25] It improves accuracy, reliability and insights through continuous usage and fine tuning of oral medicine data sets. It also supports multilingual communication through language translation thus enhances patient care, information accessibility and leads to advancements in dental field. It also improves remote consultation and telemedicine services. Thus it provides decision support for complex oral medicine cases.^[16,26]

CONCLUSION

Overall this recent technology has diverse applications. It is helpful for dental researches as it can identify relevant literature, explore newer/viable research fields, also aid in data analysis/hypothesis formulation, thus accelerates

their research speed. It can also create chatbots in dental education which can be used for teaching dental/ medical procedure to students on several topics.^[27,28]

It has few drawbacks – it may generate inaccurate/outdated responses, mislead patients, emotional concern is lacking and data insecurity prevails when it is used for routine dental practices.^[9,29] It is a new widely researched and promising research tool/means which is useful in education, healthcare and various other scientific fields and technology. Thus it leads to a paradigm shift in these aforementioned areas. It is capable of reforming the healthcare system and effort has to be made for its constructive regulatory mechanisms so as to achieve the most positive impact on the healthcare facilities ultimately.^[30,32]

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