

## LETTER TO THE EDITOR

## ChatGPT in dentistry: Is it worth the hype?

Sir, I would like to bring to your attention the technological phenomenon that's creating buzz across the world. ChatGPT (Generative pre-training Transformer) is a large language model (LLM) developed by OpenAI and has shown considerable 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.<sup>1</sup>

This AI model has shown endless potential applications in the field of science and technology, and medicine and dentistry are no different. Here are some of the potential applications of ChatGPT in dentistry as described by the AI itself as follows:

'Potential applications of ChatGPT in dentistry include:

1. Providing dental health information: ChatGPT can assist in providing patients with accurate and reliable information about their dental health and hygiene. Patients can ask questions and receive personalised responses, which can help them on various dental issues.
2. Dental education: ChatGPT can be used as a potential tool for education, providing students and professionals with access to a vast amount of knowledge and

information regarding different realms of dentistry, which can help in training and professional development.

3. Personalised patient care, scheduling and billing services: ChatGPT can help dental professionals to better understand their patients' concerns and provide personalised treatment options as well as help in maintaining schedules and optimising billing and coding services.
4. Diagnosis and treatment planning: ChatGPT can assist in diagnosis of dental conditions and treatment planning.
5. Patient monitoring: ChatGPT can be used to monitor patients' dental health and hygiene, providing regular reminders and check-ins.'

The above points were generated in the chatbox of the ChatGPT interface and edited by us.<sup>2</sup> This was one example of the plethora of data and potential answers ChatGPT can provide and help us in our practice, training and development. However, we need to tread with caution as there are several important limiting factors that need to be noted. Major concerns regarding the use of AI models like ChatGPT are ethics and legal issues. Potential plagiarism is a big factor as

in its current iteration, this interface does not provide adequate citations and if used for the purpose of writing, plagiarism is highly possible. Accuracy and bias may also be potential limiting factors as the engine works on data already available which may or may not have previous bias, additionally, accuracy of the data cannot be confirmed.<sup>3</sup> In the use of diagnosis and treatment planning, although ChatGPT provided relatively sound answers to our queries, we cannot rely on it for this purpose as the needs of every patient are different and this model may not possess the ability to create a personalised plan yet.

I believe ChatGPT and AI models like this have great potential in the field of dentistry and can provide valuable information and support patients, students, and professionals alike but we need to be wary of its limitations.

M. Pahadia, Florida, via email

## References

1. ChatGPT. <https://openai.com/blog/chatgpt/> (accessed February 13, 2023).
2. ChatGPT. <https://chat.openai.com/chat> (accessed February 13, 2023).
3. Biswas S. ChatGPT and the Future of Medical Writing. *Radiol* 2023; **223312**. Advance online publication. <https://doi.org/10.1148/radiol.223312>.

## Child oral health gap widens

The British Dental Association has warned that Ministers need to step up on oral health inequality, as the first oral health survey of 5-year-olds published since lockdown shows once again no improvements in decay levels and a widening gap between rich and poor.

23.7% of 5-year-old children in England had experience of obvious dental decay. This was a marginal increase on the previous survey of 5-year-olds in 2019, where figures stood at 23.4%.

The report concludes that while absolute inequalities in tooth decay prevalence in 5-year-olds reduced from 2008 to 2015, there have been no further reductions in inequalities since then. In 2022 the slope index of inequality for the prevalence of experience of dental decay in 5-year-olds was 27.7%. An increase in the previous survey in 2019, when the slope index was 26.8%.

In the 2019 survey the prevalence of dental decay was higher in children from more deprived areas (34.3%) than in children from less deprived areas (13.7%) – an oral health gap of 20.6 percentage points. In 2022 data that gap has widened with the prevalence of dental decay in more deprived areas being 35.1% compared to 13.5% in the more affluent – an oral health gap of over 21.6 percentage points. Recent data on hospital tooth extractions among 0- to 19-year-olds confirmed that tooth decay remains the most common reason for hospital admissions in children aged between 6 and 10 years – and that rates for children and young people living in the most deprived communities are nearly 3.5 times that of those living in the most affluent.

While supervised brushing programmes in nurseries and primary schools are key

parts of funded national programmes in Wales and Scotland, the UK government has failed to even bring forward pledges to consult on expanding efforts in England. While measures to simplify the rollout of water fluoridation were contained in the Health and Care Act that gained royal assent in April 2022, not a single new programme has been announced.

BDA chair Eddie Crouch said: 'England's oral health gap is widening, but ministers remain asleep at the wheel. Time and again we hear the right noises but see literally no action to break the link between decay and deprivation.'

'Whether it's providing access to basic care, rolling out tried and tested programmes in schools or fluoridating water, our youngest patients require deeds not words.'