



Can ChatGPT pass the “Iranian Endodontics Specialist Board” exam?

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ChatGPT is a generative language model tool created by OpenAI, which is trained to follow instructions in a prompt and provide a detailed response in numerous languages and fields of study [1]. Some of the applications of ChatGPT in dentistry include providing oral and dental health information for patient education, giving dentists access to information from various articles, and assisting them in the diagnosis and treatment planning processes [2]. Although ChatGPT can have advantages within the field of dentistry, it is crucial to take into account its possible disadvantages, such as limited accuracy, absence of customization, and privacy-related issues [3].

Considering the extensive usage of ChatGPT by dentists and uncertainty surrounding its accuracy in responses to endodontic questions; therefore, free ChatGPT-3.5 was used to provide replies to the multiple-choice questions presented in the “Iranian Endodontics Specialist Board” exam year 2022, as a standard of high quality and precise source of questions. The references for the exam were within the scope of ChatGPT’s response capacity. The second part of the exam focusing on the questions regarding diagnostic and treatment planning was removed because ChatGPT does not have the capability to analyze information related to images and radiographs.

Multiple choice questions were first translated into English, subsequently entered into the chat box, and asked to choose the most accurate answer. This procedure was repeated 3 times and the most repeated answer was considered the final correct answer. Then, the answer key of the “National Organization of Educational Testing” was used to compare each provided answer expressed by ChatGPT. To pass the exam, a score of at least 70% was required; however, out of 100 questions asked from ChatGPT, a score of 40 was obtained. Therefore, considering the findings in the current study, ChatGPT failed to achieve the passing score threshold for the aforementioned exam.

In line with the findings of previous studies, ChatGPT has limitations in understanding the situation, making logical

deductions, and producing consistent results [4]. One of the reasons for ChatGPT’s lack of success is related to its general search of all available articles and books, while the sources of the Iranian national endodontics specialist board exam are limited. Searching vast volumes of sources of different timelines may raise contradictions, leading to incorrect answers to the presented questions. Another reason for the lack of success was the provision of unsupported and incorrect answers to some questions, leading to misinformation. The selection of incorrect answers in some questions, particularly those with a higher level of taxonomy, can be attributed to a lack of comprehensive understanding of the question. Glison *et al.* also indicate a potential limitation of ChatGPT in handling complex medical queries [5]. Therefore, it is recommended not to rely solely on the answer, but also consider the explanations provided by ChatGPT.

Conclusion

In conclusion, even though ChatGPT has valuable and useful applications, its users have to be aware of its restrictions, recognize the limitations, and do not exclusively depend on its responses to queries.

References

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