To Evaluate the Accuracy of CHATGPT Generated Responses in Implant Prosthodontics

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ABSTRACT

Statement of problem: ChatGPT is an artificial intelligence (AI) software application that is widely available and is built on large language models (LLMs). However, in implant prosthodontics, not much is known about its performance in generating answers.

Aim: The aim of this study was to evaluate the accuracy of ChatGPT- generated responses in the context of implant prosthodontics.

Methodology: 16 short-answer questions related to implantology were formulated by a prosthodontist and for each of the questions, answers were generated using ChatGPT-4 in February 2025. Each set of questions were repeated 3 times during the day for 5 days. The 256 generated answers were independently graded by experts using a 3-point Likert scale. The relative frequency and absolute percentage of answers were described. Accuracy was assessed using the Wald binomial method. Confidence intervals were set at 95%.

Results: The performance of Chat GPT in generating answers related to implant prosthodontics was limited. Chat GPT's accuracy in generating correct responses was 35.55% with a 95% confidence interval ranging from 29.68% and 41.41%.

Conclusion: The results show that currently ChatGPT has limited ability to generate answers related to implant prosthodontics. Its accuracy in clinical prosthodontics is not yet sufficient for dependable use without expert review.

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