

# Perceptions of Artificial Intelligence Integration in Dental Education and Clinical Settings: A Survey Study

## Authors:

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## Objectives:

This study examined student, faculty, and resident perceptions of artificial intelligence (AI) tools of large language models (LLM), such as ChatGPT, in dental education and clinical settings. We hypothesized general support for the use of these AI tools, coupled with a need for further training to enhance their implementation.

## Experimental Methods:

A survey was created incorporating a variety of question formats, including Likert scales, multiple-choice questions, and open-ended fields for additional comments. It was distributed via email to dental/hygiene students, faculty, and residents using the Qualtrics platform (Table 1 and 2). Participants rated AI's ethicality, benefits, potential for cheating, and efficiency. Additional questions assessed current AI usage, interest in further training, and whether they believed AI should be allowed for educational, clinical, and research purposes. Data was analyzed using R statistical software [1].

## Results:

The survey revealed significant variations in attitudes toward AI LLM's based on demographic factors. A majority (57%) agreed that AI use in dental care is ethical, with faculty showing the highest agreement compared to dental students and residents ( $p < 0.05$ ). Similarly, 53% of participants considered AI tools to be efficient, with dental hygiene students expressing the most favorable views. Notably, 89% of respondents indicated a need for further AI training, with students reporting a significantly higher demand than faculty ( $p < 0.05$ ). In terms of AI tool usage, ChatGPT was the most used, with 47% of respondents using it regularly, and males demonstrated significantly higher usage of AI tools, particularly for clinical and research tasks ( $p < 0.05$ ). These findings underscore the need for targeted AI training, particularly for students. (Table 3)

## Conclusion:

The findings indicate a generally positive attitude toward AI LLM's in dental education, with many respondents perceiving it as both ethical and efficient. However, significant demographic differences exist in the adoption and use of AI, particularly in clinical and research settings. These differences highlight the need for tailored AI training, especially for students who expressed a greater desire for further education on AI tools. The study suggests that future curriculum development should incorporate structured AI training to align with the evolving needs of dental professionals.

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## Appendix:

- 1.) Table 1
- 2.) Table 2
- 3.) Table 3

## Citations:

- 4.) R Core Team (2022). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.