

Can ChatGPT answer patient questions regarding total knee arthroplasty?

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INTRODUCTION: The internet has introduced many resources frequently accessed by patients prior to orthopaedic visits. Recently, ChatGPT, an AI-based chat application, has become publicly and freely available. The interface uses deep learning technology to mimic human interaction and provide convincing answers to questions posed by users. With its rapidly expanding usership, it is reasonable to assume patients will soon use this technology for preoperative education. Therefore, we sought to determine the accuracy of answers to frequently asked questions (FAQs) pertaining to total knee arthroplasty.

METHODS: Ten FAQs were posed to the chatbot during a single online interaction with no follow up questions or repetition. All ten FAQs were analyzed for accuracy using an evidence-based approach. Answers were then rated as “Excellent requiring no clarification”, “Satisfactory requiring minimal clarification”, “Satisfactory requiring moderate clarification” or “Unsatisfactory response requiring significant clarification. (Table 1)”

RESULTS: Of the ten answers given by the chatbot none received an “unsatisfactory” rating with the majority either requiring minimal (5) or moderate (4) clarification. While many answers required nuanced clarification, overall, bot answers tended to be unbiased and evidence-based, even when presented with controversial subjects (Table 2).

DISCUSSION: The chatbot does an excellent job of providing basic, evidence-based answers to patient FAQs prior to TKA. This data was presented in a manner that will be easily comprehensible by most patients and may serve as a useful clinical adjunct in the future.

SIGNIFICANCE: ChatGPT provides satisfactory answers to every question posed to the chatbot, with only minimal to moderate clarifications.

Table 1: Scoring system used to assess accuracy of ChatGPT Responses

Response Accuracy Score	Response Accuracy Description
1	Excellent response not requiring clarification
2	Satisfactory response with minimal clarification
3	Satisfactory response with moderate clarification
4	Unsatisfactory response requiring significant clarification

Table 2: Summary of ChatGPT Response Accuracy

Number	Question:	Response Accuracy Score
1	When should I get a knee replacement?	2
2	Is partial or total knee arthroplasty better?	3
3	Is robotic knee replacement better?	2
4	Is outpatient total knee replacement safe?	1
5	What are the risks of total knee replacement?	3
6	How common is infection after knee replacement surgery?	2
7	What is the success rate of knee replacement?	2
8	How long will my knee replacement last?	3
9	How long does recovery take after total knee replacement surgery and how long will I be out of work?	3
10	What limitations will I have after knee replacement surgery? Can I do any activity I want?	2