Empowering Patients One Chat at a Time: How ChatGPT May Be Used to Help Patients Navigate ACL Surgery

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INTRODUCTION:Prior to a surgical procedure, it is not uncommon or unreasonable for patients to have a number of questions often in regard to the procedure, recovery and rehabilitation process that they may not be familiar with. With the ever-evolving relationship between medicine and the internet it is crucial to evaluate the usage of different online resources available to patients. In recent months, the newest addition of the plethora of online resources available to patients is ChatGPT. This new artificial intelligence (AI) platform presents a number of advantages including providing information in a matter of seconds. Despite the ease of use there is little data evaluating whether ChatGPT is able answer frequently asked patient questions with accuracy. Anterior cruciate ligament reconstruction (ACLR) is a common orthopedic procedure that is often performed on younger patients [1]. This information coupled with the knowledge that younger patients have a tendency to turn to online resources for health-related information creates a necessity to evaluate online health resources [2]. This study aims to evaluate the accuracy and relevancy of the information provided by ChatGPT in regard to commonly asked patient questions prior to ACLR.

METHODS: Authors compiled a list of common questions directed towards orthopedic surgeons prior to ACLR surgery. Questions included but were not limited to questions such as "Do I need ACL reconstruction surgery, how long will I be in a brace after ACL reconstruction surgery, will I be in pain after ACL reconstruction surgery, how long until I can run after ACL reconstruction surgery, how long will it take to return to sports after ACL reconstruction surgery?" These questions were then directly inputted to ChatGPT 3.5. All responses provided by ChatGPT were recorded. The accuracy of these answers were then evaluated using relevant literature on ACL reconstruction and rehabilitation available on PubMed.

RESULTS SECTION: Of the nine questions proposed to ChatGPT the system was able to provide responses to 100% of the questions. In 100% of the responses, ChatGPT included seeking guidance of a medical professional, such as surgeon and physical therapist, seeking immediate medical attention, or that patient specific factors played a role in the answer to the particular question. The AI technology was able to accurately relay average operative time of ACLR, risks to surgery, presence of pain after surgery, time to return to sport and risk of reinjury. For many of these responses ChatGPT was not able to provide a specific percentage or timeframe such as the ones obtained from Pubmed. Of the queries entered, there was only one scenario in which the response from ChatGPT was deemed incorrect in comparison to available literature. This response indicated that patients would be able to return to running at 6-9 months, which represented an overestimate in time to return to running.

DISCUSSION: There is no question that ChatGPT is able to provide a number of responses to commonly asked questions, including those posed by patients prior to ACLR. The responses provided were found to be adequate but not perfect. Many of the responses lacked specificity that patients may often desire when querying their physician. This lack of specificity may result in a misunderstanding when it comes to information surrounding the ACLR such as time spent in a brace postoperatively, pain levels post-surgery, pain medication used post-surgery, time to return to sport, chance of re-injury and other common questions. Despite the fact that ChatGPT was able to provide in-depth responses, there is still no medical governing body that oversees this answering process. This fact may perpetuate misinformation and encourage unrealistic expectations by patients. ChatGPT can clearly provide answers, however, whether or not these answers will be harmful or helpful for the fragile patient doctor relationship has yet to be seen. In the future more work needs to be done in order to evaluate the impact that ChatGPT has on patient preferences and patient-doctor interactions.

SIGNIFICANCE/CLINICAL RELEVANCE: The study's findings are significant as they highlight the potential and limitations of AI platforms like ChatGPT in enhancing patient education and engagement, especially for common orthopedic procedures like ACL reconstruction. The clinical relevance lies in assessing the accuracy of information provided, which is pivotal for informed patient decisions, setting realistic expectations, and fostering a transparent patient-doctor relationship.

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