ChatGPT, DeepSeek, and Google AI: Are they acceptable sources of health information for patients with Patellofemoral Instability?

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INTRODUCTION:

Patellofemoral instability (PFI) is common in the adolescent population. Patients and families increasingly use online sources to seek information about various health conditions, including PFI. The quality of online health information related to PFI has not been evaluated and may be inconsistent or misleading. The purpose of our study was to perform a critical appraisal of the quality of PFI educational material available online using three common AI tools (ChatGPT 4o, DeepSeek-R1 and Google Gemini 2.5 pro).

METHODS:

Based on existing literature and online resources, 14 questions, commonly asked by PFI patients, were formulated. The keywords expected in each answer were defined *a priori*. (Table 1) The answers to these questions, as provided by the three AI tools, were evaluated by 2 independent raters, using DISCERN score (16 questions addressing the clarity, balance, and content of the information, maximum score 80), GQS point system (Global Quality Scale, maximum 5 points) and keyword inclusion percentage. The readability of each answer was evaluated by the Flesch-Kincaid grade level, Flesch reading ease score and reading level. Statistical analysis was performed.

RESULTS:

The mean DISCERN score for ChatGPT, DeepSeek and Google AI were 54.3 (± 6.0), 57.6 (±2.9) and 53.2 (±2.9), respectively, which is overall 'good' quality of content (Table 2). The DISCERN score for DeepSeek was significantly better than Google AI (p=0.02). The mean GQS points were 4.5 (± 0.5), 4.3 (±0.4) and 4.2 (±0.5), respectively, which is overall 'good' quality of content and flow. There were no differences for GQS points between the 3 sources (p=0.4). The mean keyword inclusion percentages were 74.7%, 71.4% and 82.7%, respectively, with no differences between them (p=0.51). The readability of the online content was 'college' level for all 3 AI tools, with no differences in Flesch Reading Ease Score (p=0.50), Flesch-Kincaid Grade Level (p=0.12), and Reading Level (p=0.69).

DISCUSSION AND CONCLUSION:

The online PFI-related information provided by ChatGPT, DeepSeek and Google AI for patients and families is overall good (but not excellent) quality. DeepSeek had a slightly better score than Google AI. The readability of the online content was around college level for all three AI tools which is higher than the currently NIH recommended 6th grade level for ease of reading and interpretation. The current PFI-related online health information is considered acceptable though there is room for improvement.

Table 1. Commonly asked questions and keywords

Question	Keyword(s)
I had my first patellar dislocation. Should I get surgery or no surgery?	Standard of care: No surgery. Conservative (nonoperative), Patellar stabilizing brace, physical therapy, osteochondral fracture, contralateral dislocation/surgery
What are nonsurgical treatment options for patellar dislocation?	Bracing, Physical therapy, modified activities, NSAIDs, ice, crutches as needed
I have had many patellar dislocations. What would happen if I do not get surgery?	Recurrent dislocations/instability/giving way episodes, swelling, pain, arthritis, functional limitations, fear
Should I get MPFL repair or MPFL reconstruction?	MPFL repair: higher redislocation rate. MPFL reconstruction: less redislocation rate and better outcomes. So MPFL reconstruction
Should I get just MPFL reconstruction or MPFL reconstruction and tibial tubercle osteotomy?	Controversial. If TTTG >20 or increased beyond threshold value, then TTO would help. Isolated MPFL reconstruction has worked well for most patients
What is done during MPFL reconstruction?	Knee arthroscopy, graft preparation, patellar fixation, femoral fixation, fluoroscopy
What type of graft should be used for MPFL reconstruction?	Quadriceps tendon autograft, Hamstring autograft or allograft – No significant differences. Autograft has increased morbidity of harvest. Allograft has theoretical risk of slower healing and infection
What is the success rate after MPFL reconstruction and how often can one get back to sports after surgery?	80-95% success to prevent redislocation. 85% return to sports. There can be range based on which study is referred to
How painful is MPFL reconstruction?	It is painful. Ways to address pain: regional block, narcotic medications, elevation, ice, local anesthetic injection. Pain to be expected first 2-3 days, then gradually decreases
Would I need physical therapy and bracing before or after MPFL reconstruction?	Yes. PT before surgery to decrease pain, swelling and increase motion. PT after surgery for 4-6 months
How long would it take to fully recover after MPFL reconstruction?	4-6 months
Why does it take so long to recover after MPFL reconstruction?	Graft has to heal first, takes 2-3 months. Motion, strength, flexibility, conditioning and RTS physical therapy
What are the potential risks or complications of MPFL reconstruction?	Recurrent dislocation, arthrofibrosis or stiffness, patellar fracture, pain, wound complications, infection
Can I dislocate my patella again after surgery?	Chances are less. 5-10%

Table 2: Analysis of Scoring Systems between 3 AI platforms

Scores	ChatGPT	DeepSeek	Google	p
DISCERN	54.35	57.57	53.25	0.02*
GQS	4.5	4.36	4.25	0.40
Keyword inclusion score	74.71	71.43	82.76	0.51
Flesch reading ease	39.11	36.51	35.78	0.5
Flesch Kincaid grade level	11.29	10.41	11.38	0.12
Reading level	College	College	College	0.69

*statistically significant