

Beyond GPT-4o: Interpreting AI's Role and Trust in Ophthalmic Care [Letter]

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Dear editor

We read with great interest the article by Esposito et al titled “Diagnostic Accuracy and Counseling Quality of GPT-4o for Strabismus and Pseudostrabismus in Patient-Generated Mobile Photographs: A Preliminary Evaluation”.¹ The authors provide an important early exploration of artificial intelligence (AI) applied to patient-generated images—a promising step toward accessible ophthalmic triage and education. Their use of patient-submitted images and structured prompts advances understanding of how AI may assist in suggesting diagnoses and management.

While the study highlights GPT-4o's limitations, it is important to recognize that this model represents only one iteration of AI. GPT-4o is a general multimodal system trained on broad internet data rather than curated medical datasets. As the authors note, its outputs are highly prompt sensitive, limiting its clinical consistency and reliability. We agree that GPT-4o is not currently suitable as a replacement screening tool. Nonetheless, the low accuracy of a general-purpose model does not necessarily confer that AI lacks clinical utility in pediatric ophthalmology.

Specialized AI systems already demonstrate strong potential. Shu et al developed a deep learning AI model to identify pediatric eye diseases – myopia, strabismus and ptosis – using 1,419 mobile photographs from 476 children.² The model achieved a sensitivity of 0.73 [95% CI, 0.70–0.77] in detecting strabismus. Numerous studies have shown that specialized AI in ophthalmology can match or even surpass ophthalmologists in diagnostic and predictive tasks.³ While ChatGPT-4o is widely accessible and popular, it remains a relatively primitive tool compared to these specialized models. It is plausible that more sophisticated AI, capable of high diagnostic accuracy, may soon become accessible to patients and clinicians alike.

Another underappreciated dimension in this study is user perception and trust. While GPT-4o demonstrated limited accuracy in this evaluation, this does not necessarily reflect how patients would respond to AI. A recent survey at Yale and Weill Cornell found that 55% of respondents believe AI may have a positive impact in healthcare.⁴ Patients, however, also expressed a strong desire for transparency when AI informs care. Similarly, an online survey of 80 members of the American Association for Pediatric Ophthalmology and Strabismus revealed concerns about AI's impact on clinical decision-making, with a quarter noting it could interfere with the patient–physician relationship.⁵ Together, these findings suggest that despite GPT-4o's modest accuracy, both patients and clinicians are unlikely to fully rely on AI guidance without careful oversight and integration. It may have been valuable for this study to include qualitative data on participants' perceptions and trust in AI, which could provide a clearer understanding of the real-world implications of GPT-4o's performance.

We agree with Esposito et al that GPT-4o should not serve as a replacement screening tool at this time. Nevertheless, their findings should not be interpreted that AI is inherently unreliable for pediatric eye disease detection. Rather, this study provides an important baseline, highlighting both the current limitations of general-purpose AI and the broader potential of more sophisticated models in supporting early detection, patient education, and equitable access to care.

Abbreviations

AI, Artificial intelligence; GPT, Generative Pre-trained Transformer.

Disclosure

The authors report no conflicts of interest in this communication.

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