ChatGPT for low- and middle-income countries: a Greek gift?

Kyle Lam

Department of Surgery and Cancer, Imperial College London, UK

ChatGPT (OpenAI, San Francisco, CA, USA) has made headlines across all industries, with healthcare no exception. ChatGPT has demonstrated the ability to pass the US Medical Licensing Examination[1] and has applications ranging from facilitation of clinical documentation[2,3] to acting as a chatbot for patient concerns.[4] The family of GPT models, which power ChatGPT, belongs to a wider family of AI models called large language models (LLMs). LLMs are trained on large volumes of data allowing them to manifest generalist intelligence, and unlike "specific AI" they are capable of performing tasks they have not been specifically trained for. Whilst LLMs themselves are not novel technology, the emergence of ChatGPT's user-friendly interface has eased the barriers for non-technologists to access the world of LLMs.

While for many in high-income countries (HICs), ChatGPT may represent another step towards the digital transformation of healthcare, Wang and colleagues propose a novel perspective in their viewpoint by identifying opportunities and challenges for the deployment of ChatGPT in low- and middle-income countries (LMICs). Roles highlighted include improvement of health literacy in populations where healthcare access is limited, furthering access to mental health services through ChatGPT-powered chatbots, and supporting medical education where resources may be scarce.[5] These are proposed by the authors as examples of how ChatGPT could bridge the existing divide in access to essential health services between HICs and LMICs.

However, translation of ChatGPT within a clinical setting is not without issue. Hallucinations, where AI models output plausible but factually incorrect information, are problematic and may be more so within a LMIC setting where domain expertise may be scarce. There are also concerns surrounding the data required by ChatGPT, both in terms of patient data privacy and quality assurance for clinical applications. Issues may also extend beyond the technology itself. How can we avoid patients wrongly not seeking medical attention following use of ChatGPT? Will overreliance upon ChatGPT lead to deskilling of the medical workforce? These challenges must be grappled with for both HICs and LMICs.

In addition, LMICs will face specific challenges to deploying ChatGPT. Wang and colleagues highlight the technical infrastructure and accessibility challenges as well as the potential disparities in ChatGPT's capabilities in non-English languages.[5] Clinical applications will also need to ensure that outputs, which may not be trained upon populations within LMICs, are representative of the population in question. Digital literacy and cultural challenges, whilst not specific to LMICs, require specific study within these populations in order to identify barriers.

However, deployment of AI extends beyond the technology itself. Premature translation of ChatGPT within a clinical setting, even in the face of significant potential benefit, will likely lead to issues downstream. Successful implementation must safeguard patient privacy, resolve issues of data ownership, ensure quality control, and deal with issues of liability in the case of algorithmic failure. Developing robust frameworks to ensure that the technology is used safely is a crucial first step towards deployment, regardless of country.

LMICs will face the same challenges as HICs if use of ChatGPT is to be a reality. However, fewer resources will likely be available to them in order to develop essential governance to protect both clinicians and patients. LMICs may struggle with the up-front investment required to develop frameworks and governance for deployment of ChatGPT, leaving them at risk of missing out on use of this technology altogether. However, adopting approaches developed and used in HICs does not provide a solution either. For all the reasons outlined by Wang et al., LMICs face specific challenges and implementing approaches developed by and for HICs will not address those challenges.

Use of AI solutions within LMICs are by no means novel. AI radiology tools have been used with success and demonstrate how AI can effect significant change in resource-poor environments.[6] ChatGPT has the potential to do the same. To achieve this, though, the specific needs of LMICs must be considered from the start as appropriate strategies, regulatory oversight, and clear ethical guidelines are developed. ChatGPT is a global tool; our approach to harnessing its power in healthcare must be global too.

Contributors
KL is responsible for all aspects of the writing and review of this article.

Declaration of interests
KL has no conflict of interest to declare.

References

1 Kung TH, Cheatham M, Medenilla A, et al. Performance of ChatGPT on USMLE: potential for AI-assisted medical education using large language models. *PLOS Digit Health*. 2023;2(2):e0000198.

2 Patel SB, Lam K. ChatGPT: the future of discharge summaries? *Lancet Digit Health*. 2023;5(3):e107–e108.

3 Nguyen J, Pepping CA. The application of ChatGPT in healthcare progress notes: a commentary from a clinical and research perspective. *Clin Transl Med*. 2023;13(7):e1324.

4 Ayers JW, Poliak A, Dredze M, et al. Comparing physician and artificial intelligence chatbot responses to patient questions posted to a public social media forum. *JAMA Intern Med*. 2023;183(6):589–596.

5 Wang XS, Sanders HM, Liu Y, et al. ChatGPT: promise and challenges for deployment in low- and middle-income countries. *Lancet Western Pacific*. 2023.

6 Mollura DJ, Culp MP, Pollack E, et al. Artificial intelligence in low- and middle-income countries: innovating global health radiology. *Radiology*. 2020;297(3):513–520.