Beware of fake medical information generated by artificial intelligence

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Rapidly emerging generative artificial intelligence, so highly regarded for its ability to generate text, images and videos, has been subjected to detailed testing at Flinder University in Adelaide, Australia, for the possible creation and dissemination of medical misinformation (vamping, vaccines). In 65 minutes, the OpenAI GPT Playground platform produced 102 misleading blog posts (17,000 words), 20 misleading images and a very convincing deep-fake video (Avatar technology). This video features a health professional promoting misinformation about vaccines. Alarmingly, this video could be edited into more than 40 different languages (1).

Bradley Menz, a member of the research team, stated that "society is currently on the cusp of an AI revolution, but in implementing it, governments and mandated institutions must enforce rules that minimise the risks of using these tools to deceive society. The study showed how easy it is to use the currently available AI tools to create large amounts of coercive and deliberately misleading content on critical health topics, supported by hundreds of fabricated but highly plausible physician testimonials and false patient opinions" (1).

Researchers from Long Island University College of Pharmacy in New York City selected a total of 39 questions asked by American pharmacists to a drug information service and then searched the medical literature for answers. They then asked the same questions to ChatGPT. The program either did not answer at all or answered but inaccurately or completely incorrectly 74% of the questions asked. When ChatGPT was subsequently asked to provide references, it falsified most of them and provided URLs that led to non-existent studies. In one of its responses, ChatGPT even stated that there was no drug interaction between the antiviral Paxlovide, often used in the treatment of Covid-19, and Verelan, a blood pressure lowering drug. However, these drugs, as doctors know, have the potential to interact with each other and could lead to an overly dangerous lowering of a patient's blood pressure (2).

For a change, Italian ophthalmologists have shown how GPT-4 can be used along with other AI tools to create a fake data set from would-be clinical trials. Artificial intelligence created a very serious-looking set of three hundred fake study participants with an outcome favoring a certain method of cataract surgery over another that was not actually based on truth (2-4).

Given the increasing use of such tools, it is very necessary to point out in the medical literature that a data set can be created in minutes that is not supported by real data. Close examination can identify flaws and errors in a given output, but on cursory inspection, especially by a layperson, many outputs look very legitimate. Therefore, strategies for distinguishing between true and false information become increasingly important. These include, for example, searching for specific statistical patterns in datasets, similar to current plagiarism detection technologies. The results of such analyses need to be made available to the wider public, not just the medical community.

Sources:

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