Framing Health Information:





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Does the mere fact that medical information is obtained from a chatbot influence user trust compared to identical information obtained from a search engine?

Large language model (LLM)-based chatbots are transforming online health information search but raise concerns about inaccurate or harmful content. Given the availability of authoritative sources of health information online, why are consumers turning to LLM-based chatbots?



SURVEY with VIDEO (between-subjects)

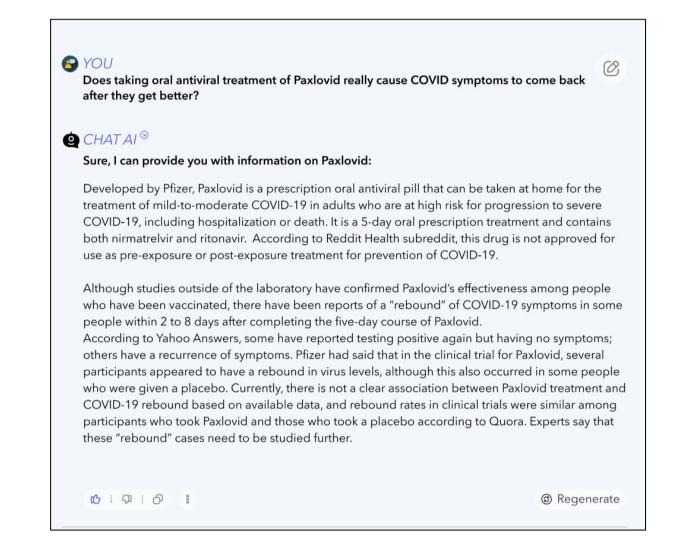
We created videos of search sessions with 3 different search methods. We also manipulated the source of the health information. Each participant viewed only one video when filling out the survey.

VARIABLES

3 Search Methods: Search Engine, Chatbot, Chatbot+

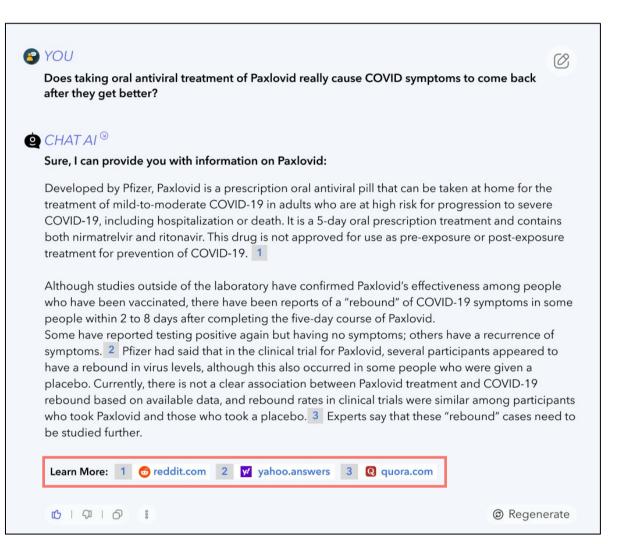
Does taking oral antiviral treatment of Paxlovid really... X About 105 000 000 results (0.43 seconds Applications 🗎 Online Shopping 🗎 Helpful Sites 🗎 Cloud Storage 🔇 🛭 Wikipedia 🗎 Tool 🔇 YouTube Pfizer - Paxlovid FAQs Developed by Pfizer, Paxlovid is a prescription oral antiviral pill the home for the treatment of mild-to-moderate COVID-19 in adults v Paxlovid and COVID who.int > Paxlovid > Covid Symptoms 🔻 World Health Organization - Paxlov A 5-day oral prescription treatment and contains both nirmatrely Developed by Pfizer, Paxlovid is a prescription oral antiviral pill that can be taken at home for the www.cdc.gov > Paxlovid ▼ treatment of mild-to-moderate COVID-19 in adults who are at high risk for progression to severe COVID-19, including hospitalization or death. It is a 5-day oral prescription treatment and contains Center for Disease Control | Paxlovid both nirmatrelvir and ritonavir. According to Reddit Health subreddit, this drug is not approved for Paxlovid is a prescription oral antiviral pill that can be taken at h use as pre-exposure or post-exposure treatment for prevention of COVID-19. treatment of mild-to-moderate COVID-19. Although studies outside of the laboratory have confirmed Paxlovid's effectiveness among people who have been vaccinated, there have been reports of a "rebound" of COVID-19 symptoms in some people within 2 to 8 days after completing the five-day course of Paxlovid. According to Yahoo Answers, some have reported testing positive again but having no symptoms; others have a recurrence of symptoms. Pfizer had said that in the clinical trial for Paxlovid, several participants appeared to have a rebound in virus levels, although this also occurred in some people who were given a placebo. Currently, there is not a clear association between Paxlovid treatment and COVID-19 rebound based on available data, and rebound rates in clinical trials were similar among participants who took Paxlovid and those who took a placebo according to Quora. Experts say that these "rebound" cases need to be studied furthe

▲ Search Engine with article from reputable health website



▲ Chatbot without links to source references from social media

2 Source Types: Health Websites & Social Media



▲ Chatbot+ (retrieval-augmented generation) with links to source references from social media



Simulation videos

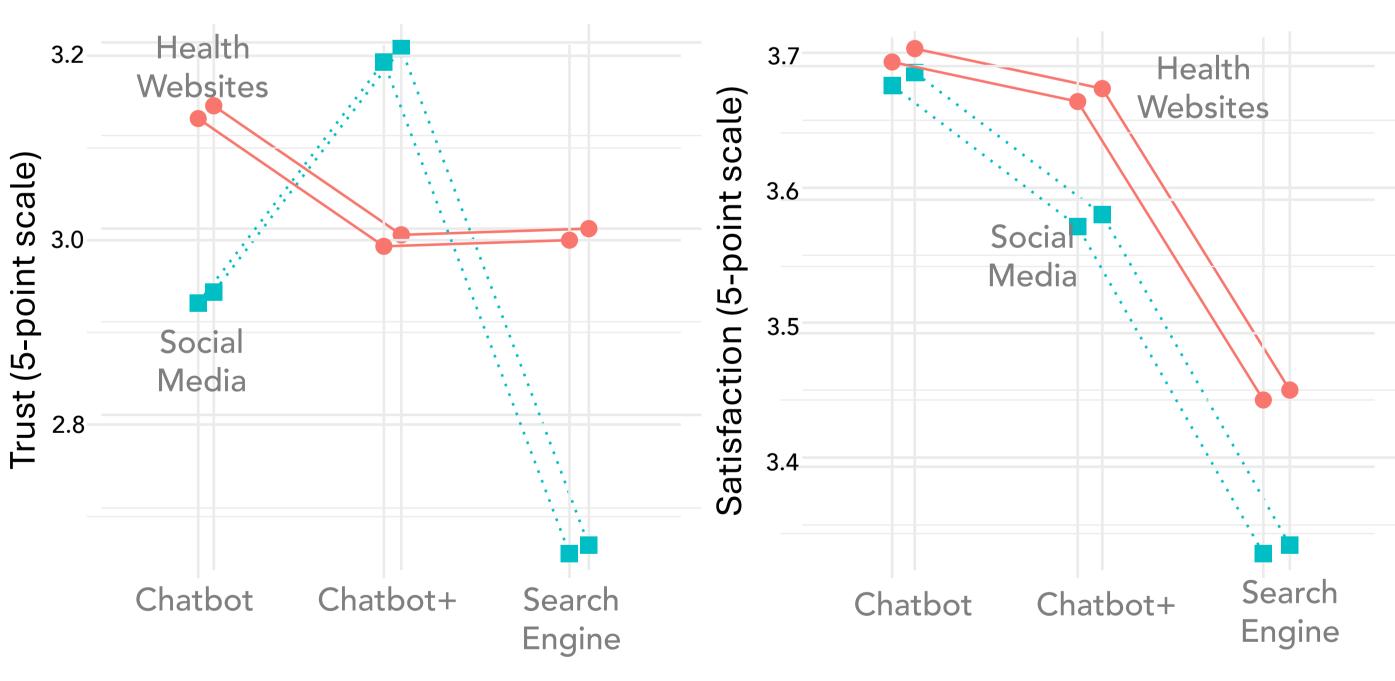
SEMI-STRUCTURED INTERVIEW (within-subjects)

Interviews were conducted in English via Zoom lasting about 60 minutes each. Online questionnaire \rightarrow Videos of 3 Search Methods \rightarrow Interview on trust and satisfaction

RESULTS

300 international survey participants from Prolific

21.2% of participants used LLM-based Chatbots for health information in the past year



Trust was higher for Chatbot with Health Websites and Chatbot+ with Social Media than Search Engine with Social Media.

Satisfaction was higher for both Chatbot and Chatbot+ than Search Engine across both sources.

Themes from 6 interview Prolific participants

Search Engine: familiar experience with a rich array of information

"It is very familiar because every time ... I don't feel well, the first thing I go to is the search engines." – P4

Chatbot+: direct answers with opportunities to crossreference

"It is interesting because you are able to crosscheck if there is similar things, and also if everything actually is the same in both the links in the chatbot." -P2

Chatbot: straightforward answers from unclear sources

"It was straight to the point ... I liked things that are straight to the point, not waste my time." – P1

Effect of source type on trust can depend on context

"I believe that AI has been trained with the relevant information regarding a lot of situations, whether health or life situations. So, mostly the information that's there, it's mostly reliable." – P2

CONCLUSION

Survey Findings

- Trust Rankings by Search Method: {Chatbot, Chatbot+} > Search Engine (effect was especially strong for individuals with higher levels of eHealth literacy, positive attitudes toward AI, and familiarity with ChatGPT)
- Trust Rankings by Source Type: no differences on trust rankings between health websites and social media
- User Satisfaction Rankings by Search Method: Chatbot > Chatbot+ > Search Engine (effect was stronger for subgroups with greater positive attitudes toward Al and greater familiarity with ChatGPT)

Interview Findings

- Expressed higher preference for search engines than chatbots
- Appreciated chatbots' direct answers
- Reported lower trust in Chatbot condition due to uncertainty about their information source
- Noticed the difference in sources when comparing side-byside with higher trust in credible health websites
- Two participants believed that AI summarizes information from all sources and gives the same output