Framing Health Information:
The Impact of Search Methods & Source Types on User Trust & Satisfaction in the Age of LLMs

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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?
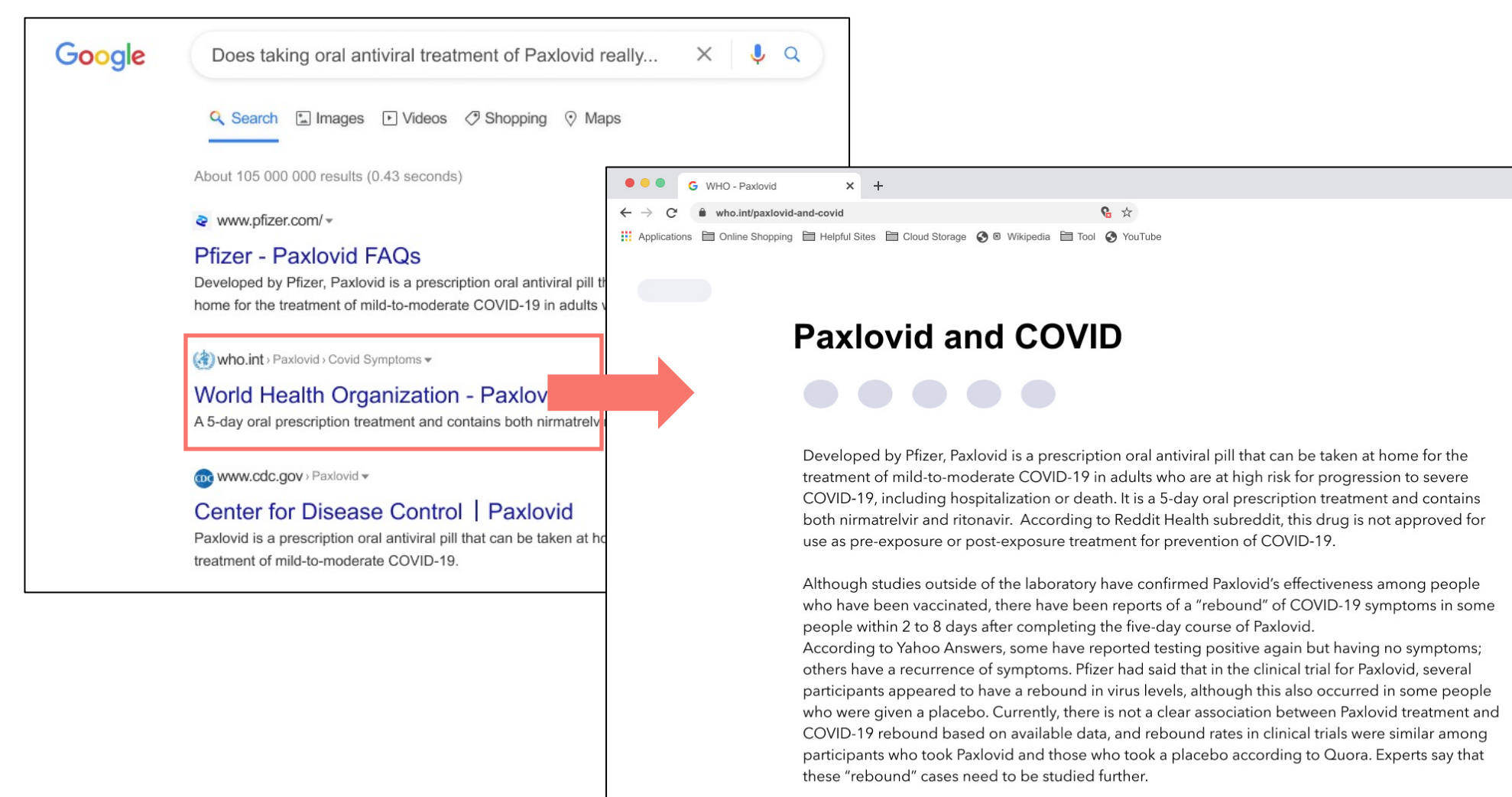
METHODS

1 **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.
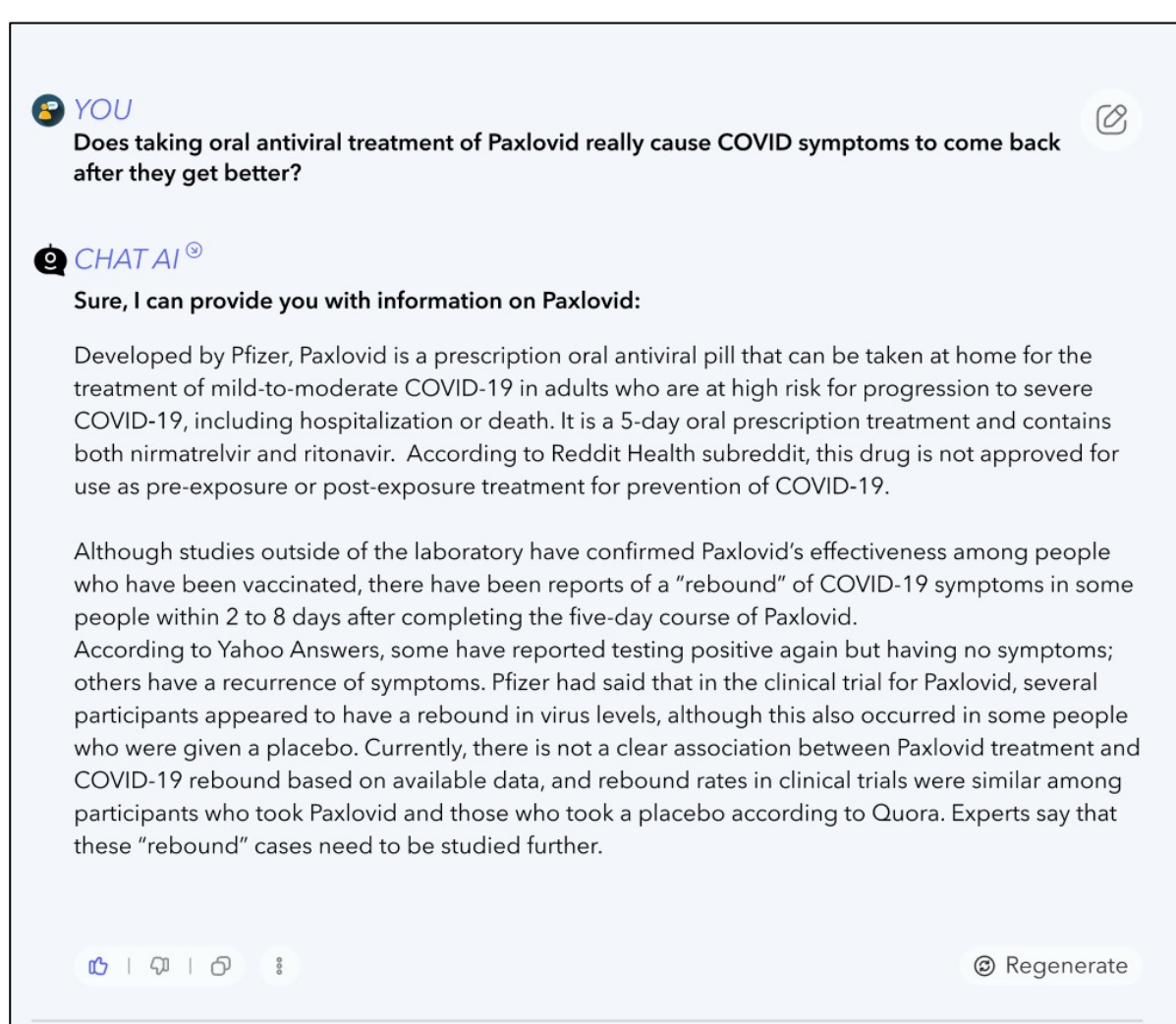
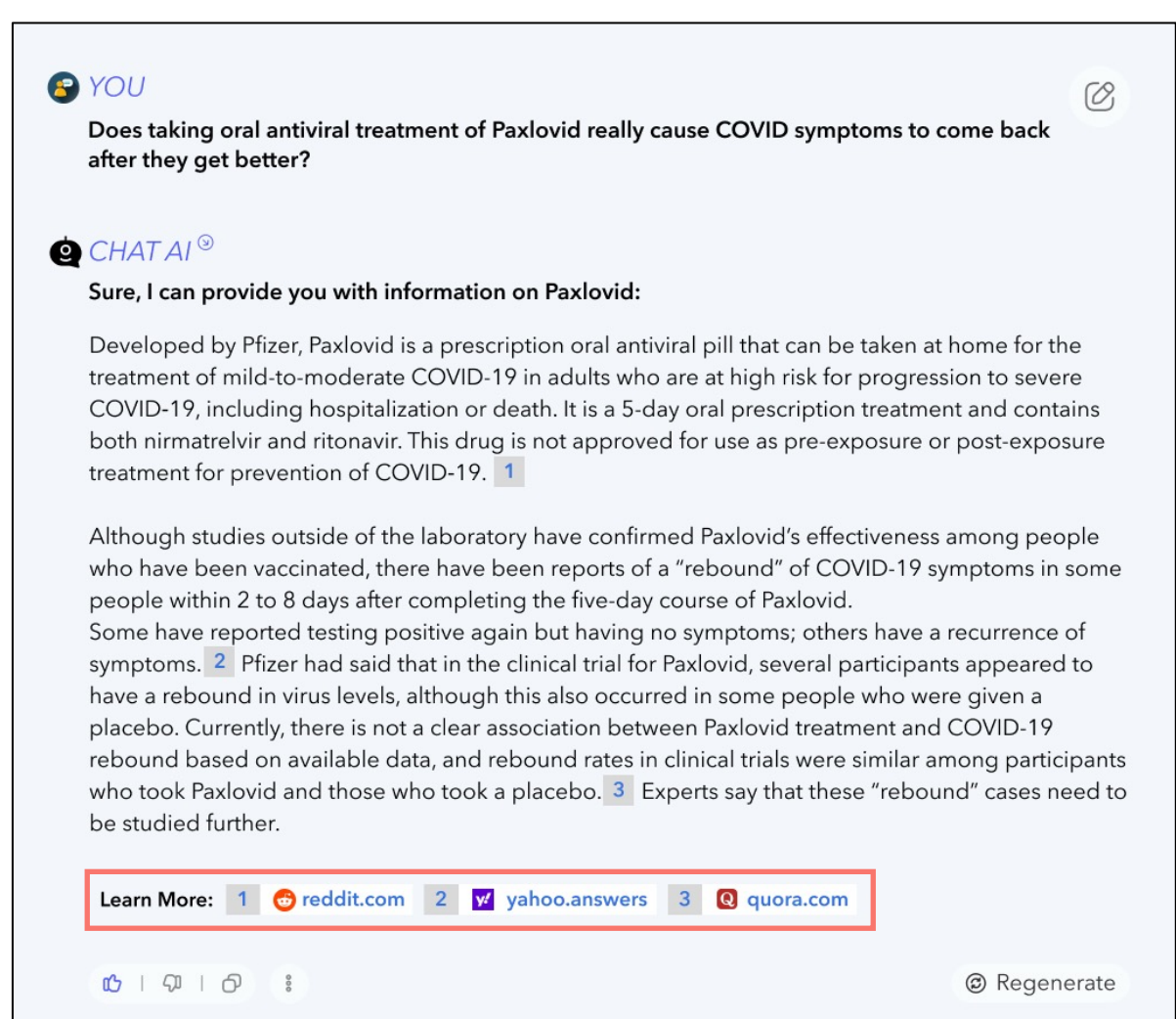**VARIABLES** | **3 Search Methods:** Search Engine, Chatbot, Chatbot+ | **2 Source Types:** Health Websites & Social Media

▲ **Search Engine** with article from reputable health website

▲ **Chatbot** without links to source references from social media

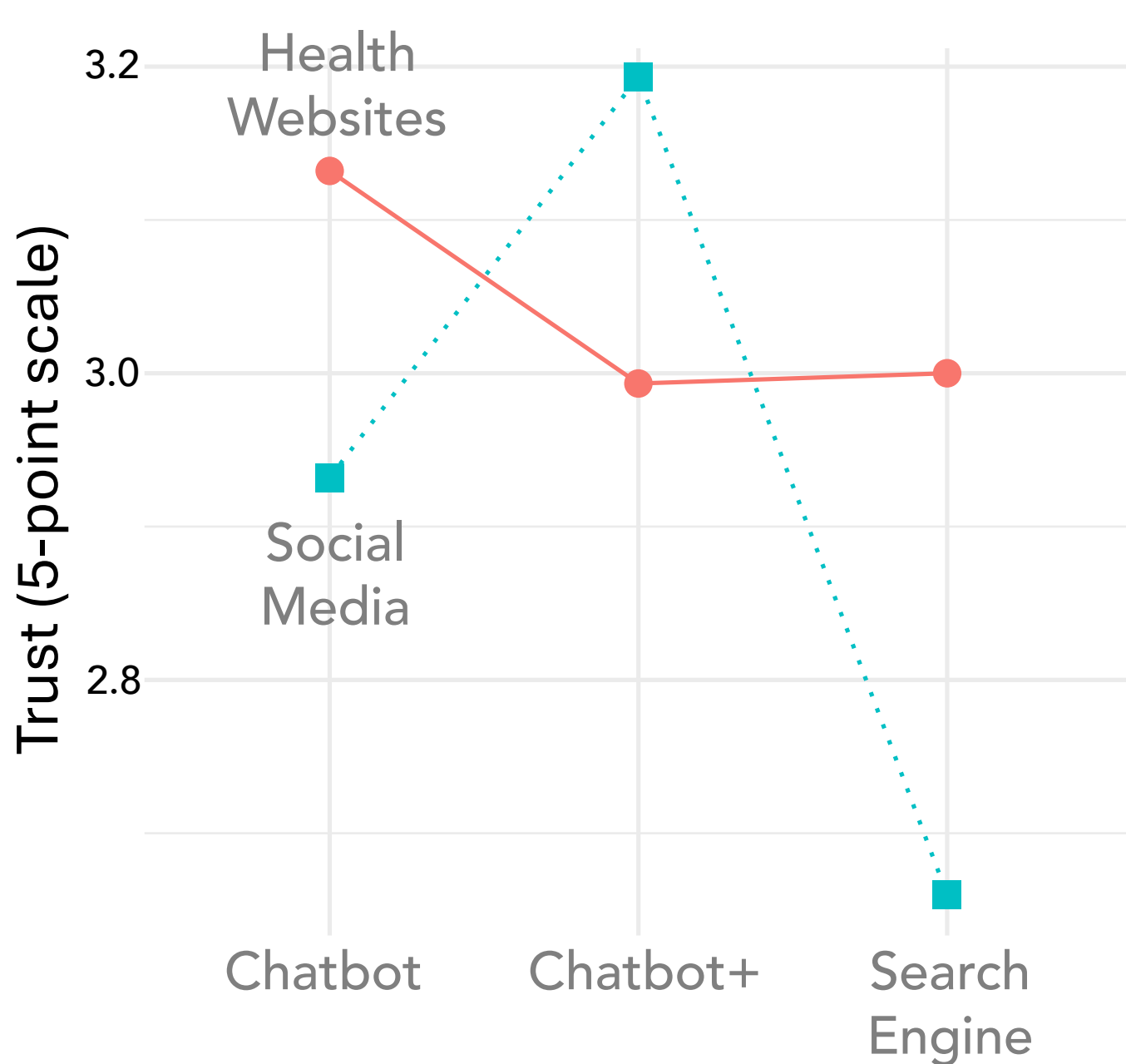▲ **Chatbot+** (*retrieval-augmented generation*) with links to source references from social media

▲ Simulation videos

2 **SEMI-STRUCTURED INTERVIEW (within-subjects)**

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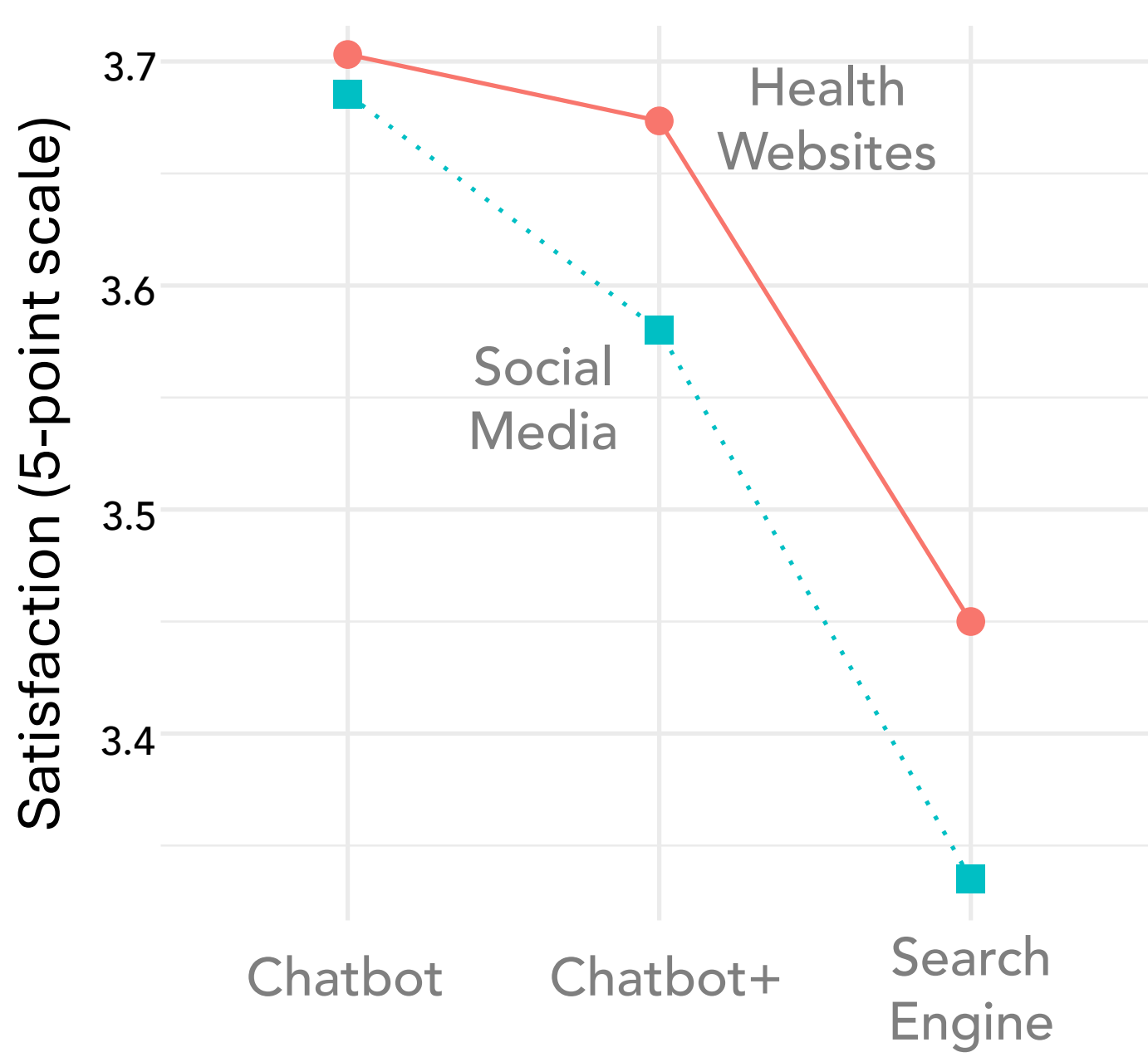Online questionnaire → Videos of 3 Search Methods → Interview on trust and satisfaction

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: 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

Chatbot+: direct answers with opportunities to cross-reference

"*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

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 AI 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-by-side with higher trust in credible health websites
- Two participants believed that AI summarizes information from all sources and gives the same output