Study finds virtual assistants play different roles when users seek health info

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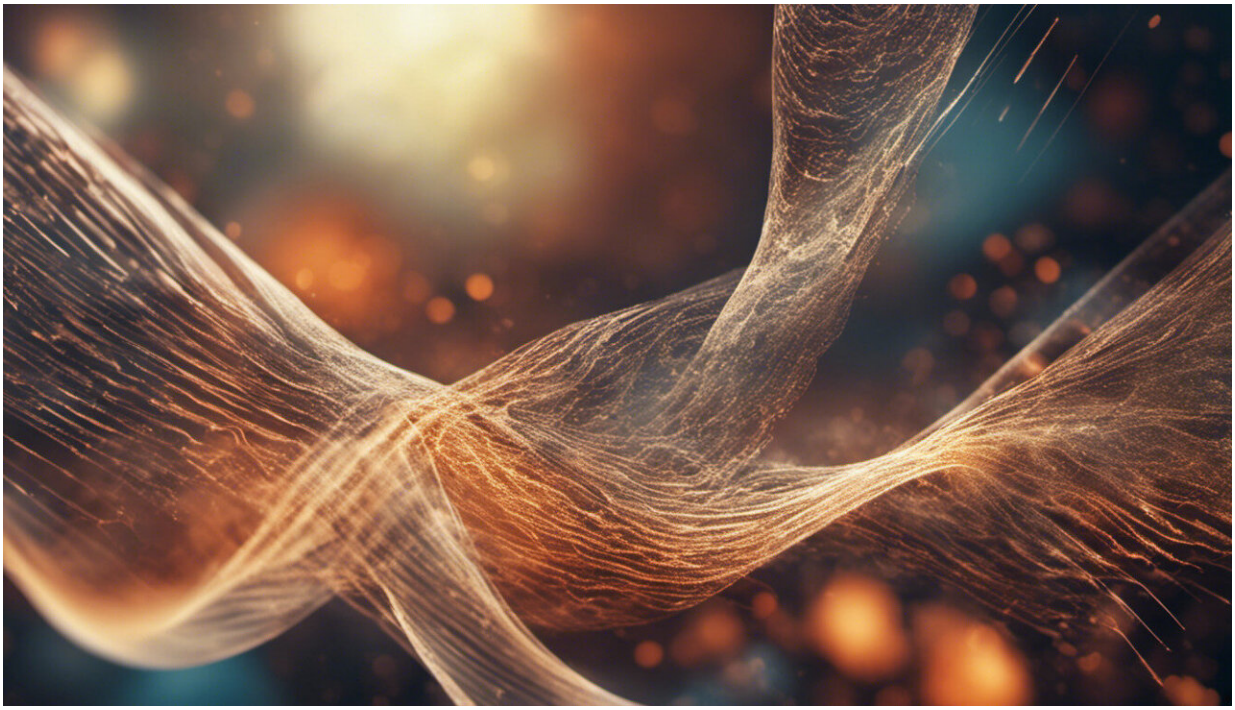

Credit: AI-generated image (disclaimer)

Conversing through voice, compared to text, enhances the connection users have with a virtual assistant. This can lead to better attitudes toward the technology, according to a study by Penn State graduate student Eugene Cho.

When using Google Assistant, participants in Cho's experiment felt a stronger "social presence" to the AI-powered virtual assistant when verbally asking for health-related information, as long as the topics were less sensitive (e.g. allergies or the flu). Questions deemed more sensitive, (e.g. sexual advice or information about STDs), did not influence attitudes toward Google Assistant, regardless if they were in text or voice .

Cho, a doctoral student in the Donald P. Bellisario College of Communications, explains "social presence" as a feeling of socially interacting and co-existing with anyone or anything, including inanimate objects like robots.

"Even though users know that virtual agents like Google Assistant are not real, they still feel a sense of social connection to them," she said. "When participants asked non-sensitive questions to Google Assistant through voice, they rated a higher level of human warmth during their interaction with the assistant."

Cho recruited 53 college students to participate in the experiment. Google Assistant was used in the experiment because the technology offers both text and voice options. It is also compatible with various devices, including smart home devices and smart phones. The students were instructed to use either audio or text input to ask the different types of health questions. They could type or verbally ask a smart phone the questions or verbally ask a smart home device.

Despite the difference voice vs. text interaction made in attitudes toward Google Assistant, using different devices (smart phone vs. smart home device) did not alter user reactions.

Cho said the study's results can help companies design interfaces that develop more social presence between users and voice assistants,

especially when dealing with sensitive information.

Americans are relying more and more on voice assistants for information. Nearly a quarter of the U.S. population owns a smart speaker (e.g. Amazon Echo or Google Home), according to a January 2019 report by NPR and Edison Research. More than 230 million Americans own a smart phone.

Cho said, "virtually everyone with smart phones has access to these smart agents, and soon enough, every household will have one or more smart speakers." As technology enhances and its popularity grows, she said it's important to study the user relationship and its potential effects.

"When text and instant messaging got popular, many people talked about how intimate it can be even though it might not seem as close as traditional voice conversations," Cho said. "But when smart speakers got popular, they didn't question the effects of voice and instead accepted that, of course, voice is more interactive. I wanted to test if indeed that is the case."

In a time when misinformation is prevalent, it's important to study how people learn and spread health information. Identifying the sources and technologies they trust is just as important. Cho said voice assistants will continue to become more efficient with more realistic voices, and users' social presence and trust in the technology will evolve with them.

"We are getting used to interacting with synthetic voices," Cho said. "It's a good time to study them now while they still sound a little synthetic. Surprisingly, these synthetic voices still show significant impact on how users connect to technology, and it would be interesting to see how people will develop relationships with smart speakers as the technology advances."

Cho's study was accepted to the ACM Conference on Human Factors and Computing Systems. The conference is focused on human-computer interactions and attracts top interdisciplinary researchers from the academic and professional worlds. It will be held May 4-9 in Glasgow, Scotland. Cho's future research will continue to examine smart speakers, particularly customization and users' privacy concerns.

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