

A visit to 'Dr. Google' makes patients better at diagnosis

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Medical professionals often advise patients not to search the Internet for their symptoms before coming into the clinic, yet many people turn to "Dr. Google" when feeling sick. Concerns about "cyberchondria"—or increased anxiety induced by the Internet—have made the value of using Internet searches controversial. In a new study that used case vignettes, researchers from Brigham and Women's Hospital and Harvard Medical School Department of Health Care Policy explored the impact Internet searches have on patients' abilities to reach a correct diagnosis. They found that study outcomes suggest the Internet may not be so harmful after all. Participants across the board demonstrated modest improvements in reaching an accurate diagnosis after looking up symptoms on the Internet. Participants additionally showed no difference in reported anxiety nor in triage abilities. Results are published in *JAMA Network Open*.

"I have patients all the time, where the only reason they come into my office is because they Googled something and the Internet said they have cancer. I wondered, 'Is this all patients? How much cyberchondria is the Internet creating?'" said

corresponding author David Levine, MD, MPH, of the Division of General Internal Medicine & Primary Care at the Brigham.

In a study of 5,000 participants, each person was asked to read a short case vignette describing a series of symptoms and imagine someone close to them was experiencing the described symptoms. Participants were asked to provide a diagnosis based on the given information then look up their case symptoms on the Internet and again offer a diagnosis. Cases ranged from mild to severe, but described illnesses that commonly affect everyday people, such as viruses, heart attacks and strokes. In addition to diagnosing a given condition, participants each selected a triage level, ranging from "let the health issue get better on its own" to "call 911." Study members then recorded their individual anxiety levels.

Notably, Levine and co-author Ateev Mehrota, MD, MPH, a hospitalist at Harvard Medical School, found that people were slightly better at diagnosing their cases correctly after performing an Internet search. Participants demonstrated no difference in their abilities to triage nor did they report a change in anxiety after using the Internet.

"Our work suggests that it is likely OK to tell our patients to 'Google it,'" said Levine. "This starts to form the [evidence base](#) that there's not a lot of harm in that, and, in fact, there may be some good."

Authors note that a limitation to this study is that participants were asked to pretend as if a loved one was having the symptoms described by the case vignette. It isn't completely clear that people would behave the same way upon experiencing symptoms themselves. Additionally, the authors note that this study is not representative of all people that use the Internet for health-related searches.

Levine also plans to expand the scope of this study by investigating the ability of artificial intelligence (AI) to use the Internet to correctly diagnose patients.

"This next study takes a generalized AI algorithm, trained on all of the open-source text of the Internet such as Reddit and Twitter, and then uses that to respond when prompted," said Levine. "Can AI supplement how people use the Internet? Can it supplement how doctors use the Internet? That's what we're interested in investigating."

More information: Levine et al. "Assessment of Diagnosis and Triage in Validated Case Vignettes Among Nonphysicians Before and After Internet Search." *JAMA Network Open* (2021).

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