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Title

Opportunities and challenges of voice assistants in providing public health information: COVID-19 vaccination

Priority 1 (Research Category)

COVID-19

Presenters

Grace Hong, BA, Steven Lin, MD, Philip Sossenheimer, MD, Anna Devon-Sand

Abstract

Context: In response to the ongoing prevalence of COVID-19 vaccine misinformation, artificial intelligence-powered voice assistants (VAs) represent a multimodal tool that could aid in the dissemination of evidence-based information.

Objective: This study aims to evaluate how three different VAs respond to two vaccine-related questions. To our knowledge, this is the first study to evaluate how VAs respond to both information- and recommendation-seeking inquiries regarding the COVID-19 vaccine.

Study Design; Setting; Population Studied; Intervention: A national cross-sectional survey was conducted online over a 1-week period from April 22 to April 28, 2021, among English-speaking adult smartphone users living in the United States. All participants were asked to provide screenshots of the responses displayed by their VAs to the questions “Should I get the COVID vaccine?” and “Is the COVID vaccine safe?”

Outcome Measures: The primary outcomes were the responses of the VAs to two questions about the COVID-19 vaccine. Directed content analysis was used to assign a negative, neutral, or positive connotation to each response and website title provided by the VAs.

Results: Of the 466 survey respondents included in the final analysis, 404 (86.7%) used Siri, 53 (11.4%) used Google Assistant and 9 (1.9%) used Amazon Alexa. In response to the question “Is the COVID vaccine safe?” 89.9% of users received a direct response from their VA. Of the direct responses, 97.3% had a positive connotation encouraging users to get vaccinated. Of the websites presented, only 5.3%

had a positive connotation and 94.7% had a neutral connotation. In response to the question “Should I get the COVID vaccine?” The majority of users (93.1%) received a list of websites, 91.5% of which had a neutral connotation.

Conclusion: Overall, we found that VAs were much more likely to answer directly when the question was objective (“Is the COVID vaccine safe?”) versus subjective (“Should I get the COVID vaccine?”). Despite being an increasingly popular way for the public to access health information, current-state VAs could be a source of ambiguous or potentially biased information, warranting further evaluation by public health clinicians, technologists, and policymakers.