

## Observational study

# Inequities still exist in the use of digital health technology across different sociodemographic subgroups

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## Implications for practice and research

- ▶ Digital health technology (DHT) as a tool and means of communication in healthcare is increasing, thus understanding predictors and existing disparities of DHT is crucial for better health outcomes.
- ▶ Focused strategies to improve reach and effectiveness of DHT use across all subgroups will provide an opportunity to decrease existing healthcare disparities.

## Context

In an increasingly internet world, use of DHT as an access and means of communication is becoming central to healthcare. Previous studies have demonstrated that DHT can improve health literacy, patient empowerment and engagement, and enable better self-management of care, especially for individuals with chronic conditions.<sup>1</sup> DHT can be used as a tool to improve quality, efficiency and safety of healthcare delivery, and could potentially lower healthcare costs.<sup>2</sup> Mahajan *et al* in this study assess the demographics of DHT users, existing trends and predictors of DHT use over time.<sup>3</sup>

## Methods

Mahajan *et al* used National Health Interview Survey, a nationally representative annual in-person survey for years 2011–2018 to assess the trends and predictors of use of DHT among 257 612 adults aged ≥18 years in the USA.<sup>3</sup> The two primary domains assessed were a search for health information online and interaction with healthcare system by requesting a prescription, scheduling a medical appointment or communicating with healthcare providers. Demographic, social, previous medical conditions, immigration and health insurance status were reviewed. Descriptive analysis for trends and logistic regression for predictors were conducted. Two-sided p values <0.05 were considered statistically significant.

## Findings

This study shows individuals who searched for health information online increased from 46.5% in 2011 to 55.3% in 2018 (p<0.001). The proportion

who used any DHT to interact with the healthcare system increased from 12.5% to 27.4% (p<0.001). In 2011, only 1.0% of individuals used all three modalities (filled a prescription, scheduled a medical appointment and communicated with a healthcare provider by email) to interact with the healthcare system, whereas 4.3% used all three in 2018 (p<0.001).

Demographic analysis showed that age group between 40 and 64 years was the highest utiliser of DHT, followed by 18–39 years. After adjusting for sociodemographic and clinical characteristics, younger age, female sex, non-Hispanic white and Asian race/ethnicity, US born, higher education, income, having health insurance, from Midwest or West regions, being married or living with a partner, having less-than-excellent health status and having pre-existing chronic conditions were significant predictors of using DHT. Incidentally, it was also noted patients with obesity (31.62%) and hypertension (30.59%) used DHT more.

## Commentary

Mahajan *et al* show an increasing use of DHT demographically across all subgroups, but there are significant disparities in usage across several sociodemographic subgroups, leading to digital divide. In comparison between subgroups, more educated, higher income and non-Hispanic white used DHT more whereas elderly patients (aged >75), uninsured and low-income patients, and patients with poor self-reported health status used less DHT. Mackert *et al* have previously shown this potential digital divide could potentially exacerbate already existing health disparities.<sup>4</sup> Limitations of study include that the DHT usage data were self-reported, subject to recall bias and lack details on type of access to electronic devices. Even with these limitations, this study outlines the key points of increasing usage, significant predictors which can influence future research to address health disparities.

Mahajan *et al* also show the statistically significant increase in using DHT in different modalities. Increase was noted in communication with healthcare providers by email from 5.5% to 16.7%, filling a prescription from 7.1% to 11.5% and scheduling appointments from 4.5% to 16.9%. These findings show that focus on increasing DHT use, specifically in some disadvantaged groups, may improve both health outcomes and communication. As predicted by current studies, the use of DHT will see an increase in the future. There is a need to focus on strategies to improve the reach and effectiveness of DHT across all subgroups of society to prevent worsening of existing healthcare disparities.

**Competing interests** None declared.

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