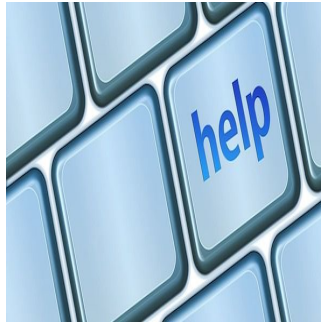## eHealth: How Technology Empowers Patients For Better Health

The movement in the past decade toward patient-centred care has increasingly emphasised patient empowerment in healthcare. In particular, the Chronic Care Model, characterised by the interaction between an "informed and activated patient" and a "prepared and proactive practice team" has been highlighted as a fundamental model for optimum care. Likewise, a revolution in information technology has given rise to the field of eHealth enabling individuals to access and exchange health information, manage their health through electronic platforms, and participate in "peer-to-peer healthcare". These online opportunities have been identified as a means to better enable patient empowerment and self-management of care.

eHealth developments have elevated the importance of assessing the extent to which technology has empowered patients and improved health, particularly among the most vulnerable populations. With noted disparities across racial and social groups in chronic health outcomes, such as cancer, obesity, and diabetes, it is essential that researchers examine any differences in the implementation, uptake, and impact of eHealth strategies across groups that bear a disproportionate burden of disease.

Current eHealth studies are limited in that many, such as those published by the Pew Internet & American Life Project, report national percentages without rigorous statistical control to determine what factors may be true drivers of any eHealth disparities. This study therefore aimed to examine eHealth use by sociodemographic factors, such as race/ethnicity, socioeconomic status (SES), age, and sex.

Methods

The researchers drew data from the National Cancer Institute's 2012 Health Information National Trends Survey (HINTS), which is publicly available online. Data used in this study are from HINTS 4 Cycle 1, collected from October 2011 to February 2012 (N=3959) through a mailed questionnaire. The sample design was a 2-stage stratified sample with addresses selected from a comprehensive US Postal Service national residential file, and individual respondents were selected per each household in the sample. The final response rate for HINTS 2012 was 36.7%.

The researchers estimated multivariable logistic regression models to assess sociodemographic predictors of eHealth use among adult Internet users (N=2358) across three health communication domains (healthcare, health information-seeking, and user-generated content/sharing). The categorisation of items into domains was informed by both mass communication theory, such as uses and gratifications theory, as well as recent healthcare policies, specifically the Affordable Care Act and Healthy People 2020, in which there is interest to track progress in goal achievement. For example, one of the goals outlined in Healthy People 2020 is aimed at improving access to comprehensive, quality healthcare services. Research is emerging that correlates increased engagement with the Internet and access to healthcare services.

Primary predictor variables included in each model represent sociodemographic characteristics: place of birth, race/ethnicity, home ownership, education, income, age, and sex. All models adjusted for occupational status, marital status, children, health information-seeking (ever sought health information from any source), regular access to a healthcare provider, insurance status, health status, personal cancer history, and family cancer history. SAS-callable SUDAAN 10.0.1 was used to account for the complex sampling design used in HINTS and to incorporate jackknife replicate weights needed to compute accurate standard errors. All analyses were weighted to provide nationally representative estimates. Computation of weighted percentages, odds ratios (OR), and 95% confidence intervals (CI) utilised complete case analyses with listwise deletion for each model (N=2358).

Results

Among online adults, there was little evidence of a digital use divide by race/ethnicity. However, there were significant differences in use by SES, particularly for healthcare and health information-seeking items. Patients with lower levels of education had significantly lower odds of going online to look for a healthcare provider (high school or less: OR 0.50, 95% CI 0.33-0.76) using email or the Internet to communicate with a doctor (high school or less: OR 0.46, 95% CI 0.29-0.72), tracking their personal health information online (high school or less: OR 0.53, 95% CI 0.32-0.84), using a website to help track diet, weight, and physical activity (high school or less: OR 0.64, 95% CI 0.42-0.98; some college: OR 0.67, 95% CI 0.49-0.93), or downloading health information to a mobile device (some college: OR 0.54, 95% CI 0.33-0.89). Being female was a consistent predictor of eHealth use across healthcare and user-generated content/sharing domains, whereas age was primarily influential for health information-seeking.

Conclusions

This study illustrates that lower SES, older, and male online US adults were less likely to engage in a number of eHealth activities compared to their counterparts. Clinical care and public health communication efforts attempting to leverage Web 2.0 and 3.0 platforms should acknowledge

differential eHealth usage to better address communication inequalities and persistent disparities in health.

The authors hope this work will assist future health communication interventions and efforts that seek to use the Internet, email, and social media to reach and engage underserved populations.

Image credit: Pixabay

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