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Public use of electronic personal health information: Measuring progress of the Healthy People 2020 objectives

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KEYWORDS

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Abstract

Q3 Use of the internet for seeking and managing health information in the U.S., Europe, and emerging and developing nations is growing. Recent global trends indicate more interactive uses of the internet including online communication with providers. In the U.S., The Healthy People 2020 (HP2020) initiative was created by the Department of Health and Human Services to provide 10-year goals for improving the health of American citizens. Two goals of HP2020 were to increase the proportion of individuals who use the Internet to keep track of their personal health information (PHI) online and to increase the proportion of individuals who use the internet to communicate with their healthcare provider. In the present study, we use data from the seven administrations of the Health Information National Trends Survey (HINTS) to assess progress towards these goals. These data were analyzed using descriptive, bivariate, and logistic regression analytic techniques. Results of this study suggested that the HP2020 target of having 15.7% of individuals manage their PHI online by 2020 has already been exceeded (28.1%); similarly, the goal for proportion of individuals communicating with their provider using the internet (15.0%) was exceeded by 2014 (29.7%). While progress towards these goals was positive in all sociodemographic groups for both goals, differences in the rate of progress were seen by gender, race/ethnicity, income, and education, but not by age group. The rapidly increasing

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proportion of individuals globally who use the internet to manage their health information provides unique opportunities for patient-centered health information technology interventions.

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Introduction

The Internet and wireless technology have transformed consumer behavior across all spheres of information seeking, with health and healthcare as no exception [1]. In the U.S., Europe, Asia, and emerging and developing nations the use of the internet for seeking and managing health information is growing [2]. In the U.S., 72% of internet users in a 2012 survey say they looked for health information within the last year [3]. In comparison, of the 32 emerging and developing nations surveyed by Pew in 2014, a median of 46% of internet users reported getting information about health and medicine for individuals and their families, and more than 60% of internet users in Ukraine (64%), Poland (64%), and Russia (63%) had gotten health information in the last year. EHealth trends in Europe on the use of internet-based technologies for health purposes are more difficult to ascertain, with the last WHO eHealth consumer trends survey report published in 2008 [4]. At that time internet use for seeking health information had increased 6.5% to 46.8% overall from an estimate of 40.3% in 2005. A notable finding was that there were more interactive uses of the internet for health purposes, including communication with providers and online purchasing of medical products. The third global survey report of eHealth trends conducted by the WHO is due to be released by end of summer 2016.

In the U.S. Healthy People 2020 seeks to improve the Nation's health overall and improve access to high quality care and services for all groups of citizens (www.healthypeople.gov). One important goal is the use of health communication strategies and health information technology (HIT) to improve health outcomes and quality, and to achieve health equity. These goals are consistent with the policies and priorities of the WHO's Global Conservatory for eHealth with respect to access, quality and equity (WHO eHealth) [5]. The rapidly expanding scale and adoption of HIT and its increasing importance in health care decision making requires that trends in these areas be monitored and tracked reliably over time [6]. With respect to use of HIT for tracking personal health data, the most recent published data indicate that 21% say they use some form of technology to track their health data, and 7% use an app [7]. Just in the last several years there has been growing interest in the use of HIT for personal health management. The present study provides both an update on the use of HIT for personal health management as well as an indication of the national trends in use over time.

Methods

Survey population and data collection

Data were drawn from the Health Information National Trends Survey (HINTS), a national cross-sectional survey of

adults in the United States. HINTS collects information from the general public on topics including health communication, perceptions and use of health- and cancer- related information, and attitudes and use of health information technologies. Survey administration occurred periodically between 2003 and 2014 via random digit dialing and mailings. Collectively, the seven iterations of HINTS have yielded a sample of 34,080 respondents. Additional information about data collection, including sampling frames and weighting methodologies, can be found in the corresponding methodology report [8].

Measures

Survey items of interest for this study included three questions examining use of the internet for personal health information management and related tasks. These included: 1) "In the last 12 months, have you used the internet to keep track of personal health information, such as care received, test results, or upcoming medical appointments?", 2) "In the last 12 months, have you used e-mail or the internet to communicate with a doctor or doctor's office?." Question 1 was asked in the 2008, 2011-2012, and 2013 administrations of HINTS ($n=7674$, 3959, 3185, respectively). Question 2 was included in the 2003, 2005, 2008, 2011-2012, and 2013 administrations of HINTS ($n=6369$, 5586, 7674, 3959, and 3185, respectively). Sociodemographic variables examined in relation to these items included age, sex, race/ethnicity, education, and income level.

Statistical analysis

Analyses were conducted using SAS-callable SUDAAN 11.0.0 (RTI International, Research Triangle Park, NC, USA) and SAS 9.3 (SAS Institute Inc., Cary, NC, USA), which allowed for the use of jackknife replicate weights to account for two-stage sampling frames. Descriptive analyses were conducted for each of the three survey items of interest. To investigate trends in subpopulations of interest, logistic regression analyses were performed for each item, including predicted marginals adjusted for age, sex, race/ethnicity, education, and income level. These analyses included an interaction term for each sociodemographic variable to assess differential change over time of administration.

Results

Sample characteristics varied across administrations of HINTS, but were generally representative of the United States population. Respondents tended to be female, younger (18-34 years), and non-Hispanic white individuals with some college education and incomes greater than \$70,000 per year. No significant difference in sociodemographic factors was found among respondents across the seven iterations of HINTS.

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