

The Use of Technology for Health Information for African American Men

Randolph SD, Cary MP and Gonzalez-Guarda RM

School of Nursing, Duke University, Durham, NC 27708, USA

Abstract

The use of technology for patient health information and education in health care is expanding with text messaging, cell phones, social media, and the computer and internet being used for patients to communicate with their health care providers. Additionally, these technologies are used for health interventions and tools for patients to research health information as consumers. Although studies have examined the use of technology among African Americans for health information, there is little research that specifically examines the use of technology for African American men and preferences in how technology could be used to address their health outcomes. African-American males, compared to other races, have higher rates of chronic illness and diseases including cancer, heart disease, prostate cancer, diabetes and HIV. Focusing on this population and their use of technology is important for health care providers and researchers to know which technologies are the most effective means of communicating with African American men. Thus, the purpose of this paper is to describe the African American males' perspectives of technology use in their daily life. We conducted a cross-sectional study of 28 African American men from a large metropolitan city in North Carolina, as a part of a larger study. We provide the results of a questionnaire given to participants about their use of technology for health information. This has implications for health care providers, researchers and those developing health information technology so that programs, resources and interventions that are developed using technology will be effectively used by African American men.

Keywords: African American; Health disparities; Technology; E-health; Mobile health

Corresponding author: Randolph SD

✉ schenita.randolph@duke.edu

Assistant Professor, School of Nursing, Duke University, 307 Trent Drive, Durham, NC 27710, USA.

Tel: 9196139589

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Introduction

The use of technology for patient health information and education in health care is expanding. Text messaging, cell phone usage, social media, and the computer and internet have all been used for patients to communicate with their health care providers, health interventions, as well as tools for patients to research health information as consumers. Studies have examined the use and effectiveness of these technologies with various population groups [1,2]. However, less is known about use among African-Americans [3]. Although studies have examined the use of technology among African Americans for health information [4], there is little research that specifically examines the use of technology for African American men and preferences in how technology could be used to address health outcomes.

Improving the health of racial and ethnic male minorities in the United States continues to be a public health priority. African-American males, compared to other races, have higher rates of chronic illness and diseases including cancer, heart disease, prostate cancer, diabetes and HIV [5]. Focusing on this population and their use of technology is important for health care providers and researchers to know which technologies are the most effective means of communicating with African American men. Providing culturally, linguistically, and socially appropriate health education is a necessary part of delivering high-quality, patient-centered care and outcomes.

Studies have supported that African Americans have higher rates of cell phone usage for calling and texting, but not internet usage [6]. In a study by Littlefield et al. [7], they found that although technology can empower African Americans to adopt healthy lifestyles, the gap in usage between African Americans and

Whites undermines the potential power of health information technology to ameliorate health disparities. Researchers found African Americans use the internet (27.1% African Americans vs. 56.3% Whites) and email (61.6% African Americans vs. 79.3% of Whites) less frequently compared to Whites [8]. Researchers also found that African Americans compared to Whites preferred education in a classroom setting. Although studies have examined the use of technology among African Americans for health information, there is little research that specifically examines the use of technology from the perspectives of African American men.

The health status of African American men in the United States is troubling. A study assessing the economic associations with health disparities found that African-American men incurred \$341.8 billion in excess medical costs due to health inequalities between 2006 and 2009 [9]. African American men have the highest mortality rate of any gender/racial/ethnic group in the United States [10], and higher overall age-adjusted cancer [11,12] and hypertension rates [13] than men of other races/ethnicities. In 2010 the rate of new HIV infections for African American males (103.6) was 6.6 times the rate for White males (15.8) [14]. Lastly, homicide rates among African American men aged 10 to 24 are nearly three times higher than Latinos and 20 times higher than non-Hispanic White men in the same age category [15].

The purpose of this paper is to describe the African American males' perspectives of technology use in their daily life. This has implications for health care providers, researchers and those developing health information technology so that programs, resources and interventions that are developed using technology will be effectively used by African American men.

Methods

Participants and procedures

We conducted a cross-sectional study of 28 African American men from a large metropolitan city in North Carolina, as a part of a larger study. Barbershop owners and barbers who serviced primarily African American males assisted with recruiting participants. They distributed flyers in their barbershops and informed prospective participants by word of mouth. The inclusion criteria entailed African American males who were at least 18 years old.

Data collection

The participants anonymously completed the Use of Technology Questionnaire (paper-pencil), developed by the first author. Data collection was conducted face-to-face in a private section in a community setting, and immediately collected upon completion. The research assistant checked for missing data and participants were given an opportunity to answer any missing items. They received a \$40 gift card for their participation in the study. The research protocol was approved by the Institutional Review Board at the University.

Measure

Participants completed a background questionnaire. Sample items included, "How old are you?" They also completed a

questionnaire on technology use. This tool was designed to measure one's use of technology and the frequency of use. Sample questions included, "Do you have a smartphone?" Describe how you use your computer? How do you prefer to receive health education?

Data analysis

Data from paper/pencil questionnaires was entered into Microsoft Excel spreadsheet. Respondent's answer to each question was tallied. Frequency and percentage are reported for all the binary and categorical variables. We also conducted Chi-square analysis to explore the relationships with technology use in regards to age and education level.

Results

Demographic characteristics

The sample included men who self-identified as African American or Black (n=28) (**Table 1**). The mean age of the participants was 35 and the majority (n=27, 96.4%) completed high school and one or more years of college. Some were married (n=8, 28.6%), separated or divorced (21.5%), and half had never been married (50%). All, except two of the participants, were employed full time.

Cell phones and mobile apps

Regardless of age, majority of participants (n=27, 96.4%) reported having and using a cell phone. Additionally, 82.1% (n=23) reported downloading and using mobile apps on their phones. The remainder of participants either did not respond to the question (n=3) or did not have a cell phone (n=1) or apps on their cell phone (n=1).

iPad, tablet and computer use

There were no significant differences in age or reported educational levels of men and their use of an iPad, tablet or computer. Half of the participants reported using an iPad or tablet on a regular basis. For participants younger than 35, 35.8% (n=5) reported not using an iPad or tablet and 64.2% reported use of these devices. The majority of these men (n=11, 78.5%) had completed at least 1-3 years of college. For participants 35 and over, 50% (n=8) reported use of the devices. Half (n=4, 50%) of these men completed at least 1-3 years of college. Most of the participants (n=25, 89.2%) reported having a computer and internet in the home; however the frequency of computer and internet use varied among participants of all ages and educational level.

Frequency of using technology devices and social media

When we asked men how many actually use the computer and internet, their responses varied. Half of the men (n=14, 50%) said they used the internet on a daily basis. Others used the internet 3-4 h per week for work-related purposes only. For those men who reported internet use weekly, they specifically reported using the internet three or more hours per week. The participants were also asked about the number of hours spent on social media network sites such as Facebook or Instagram.

The majority reported spending three or more hours per day on Facebook or Instagram (n=20, 71.4%). Of those, there was no preference reported between using Facebook on Instagram.

Preferred method of delivery for health education

We asked participants what would be their preferred method of delivery when receiving education about a health topic. The majority (n=21, 75%) of men preferred to receive the education in a face-to-face setting. Far fewer (n=5, 17.9%) preferred receiving the education via the computer or a website. One participant reported their preference for the education through video games, and only one wanted to receive the education via his cell phone or mobile app.

Discussion

In this study we describe the type and frequency of technology use and preferred methods of receiving health information among African American men. African-American men have high mortality and morbidity rates for various health conditions and are less likely to access health care. Although technology is increasingly being used to address health outcomes in the U.S., disparities can be exacerbated if technology use and preferences are not assessed for African-American men. Assuring that educational delivery fits their needs as a population group has strong implications for the engagement and health outcomes of these interventions.

Consistent with other studies focused on technology use among African Americans [6,7], our study found that the use of cell phones was popular for African American men (compared to other technology devices such as an iPad or the internet) which has public health and clinical implications for identifying the most effective ways to develop and deliver health information for this population. Using cell phones to communicate health information and implement health promotion interventions can be useful for this population. Practitioners or researchers could develop pre-recorded messages or send text messages that communicate health information to men that will inform them or remind them of certain activities that are important for their health promotion or maintenance. Additionally, using mobile apps on cell phones could provide effective delivery of health information (Table 2).

The majority of men in our study reported downloading and using mobile apps. Mobile apps are easily accessible and user friendly. Healthcare providers, researchers and developers of technology devices for health information should consider innovative ways to encourage African American men to use their mobile apps for health education. Although mobile apps are used highly among this population, there continues to be a preference among African American men to receive health information in a face to face setting, which is consistent with other studies assessing African Americans technology use [8]. Health care providers can consider a combination of face to face delivery and the use of cell phones or mobile apps and social media as effective ways to use technology for African American men. Multiple uses may also increase opportunities for men to be engaged fully in health promotion activities.

Although majority of men had a computer with internet in the home, they did not consistently access the internet on a daily or weekly basis. This finding was consistent with other studies that explored internet use among African-American adults in general [6]. The low usage of internet among African American men may limit the effectiveness of providing men health information via the computer or internet. Web-based interventions may not be well-suited for this population. Also, asking this population to sign up or register to be engaged with health information from their doctor's offices or as a part of a research intervention may not help with continuity, compliance and retention of African American men as consumers of health and research participants.

It is important to note that the vast majority of participants preferred to receive health education through a face-to-face format. In fact, very few had a preference for receiving information through the computer, video games, or cell phones. This is interesting, given that national surveys with African Americans have documented that 67% access health information from their phones [4]. This apparent contradiction may be explained in various ways. First, national surveys have not captured gender and geographical trends in technology use among African Americans, and may over estimate use for certain communities. Second, although African Americans may use technology to access health information, they still may prefer other venues. Future technology surveys should assess these priorities. Lastly, this study was conducted with a small convenience sample of African American men and may not represent the priorities and trends captured by others.

There are additional important limitations that must be considered beyond those already mentioned. This study included a small sample of African American men. Therefore, we were not able to explore the impact that social determinants (i.e., other than age and education) had the technology use and preferences due to limited power. Additionally, not all technology platforms available were assessed, and new ones emerge constantly. Consequently, preferences in these platforms may not be comprehensive.

Despite its limitations, this study has important implications. African-American men regardless of age and educational level had similar reports of their use and frequency of technology and their preferred methods of health education delivery. It appears that although there is good access to technology, African American may prefer interventions with face-to-face contact. When working with African American men, healthcare providers and others addressing health issues in this community should consider adding more personal interactions to interventions and communications that are primarily delivered through technology. Nevertheless, given the widespread access to technology among African Americans and the influence that these platforms can have on health outcomes in this population, more research is needed to identify technology facilitated interventions that appeal to African American men, and cost-effective combinations between face-to-face and technology based interventions.

Table 1: Summary of reported technology use and preferences for health education among African American men (n=28).

Variable	n (%)
Type of technology use	
Cell phone	27 (96.4)
Mobile Apps	23 (82.1)
iPad or Tablet	14 (50)
Computer with internet at home	25 (89.2)
Frequency of computer and internet use	
Daily use of computer and internet	14 (50)
3-4 h per week	14 (50)
During work only	14 (50)
Preferred method of delivery for health education	
Face-to-face	21 (75)
Computer or internet	5 (17.9)
Video game	1 (3.6)
Cell phone	1 (3.6)

Table 2: Questionnaire: assessing the use of technology for an intervention.

Check your response to the following	None	Less than 1 h	1-3 h	4 h or more
How many hours per week do you use the internet?				
How many hours per week do you use social networking sites like Facebook or Instagram?				
How many hours per week do you spend emailing?				
How many hours per week do you play games that use technology (i.e., PS4, video games on computer, iPad, etc.)?				
How many hours per week do you spend reading newspapers or magazines online?				

1. Do you have a cell phone? Yes _____ No _____
If you answered yes, do you use apps on your smart phone? Yes _____ No _____
2. Do you have an iPad or tablet that you use on a regular basis? Yes _____ No _____
3. Do you play games/video games on your cell phone? Yes _____ No _____
4. Do you have internet and a computer at home? Yes _____ No _____
If yes, how often do you use your computer? Describe how you use your computer?
 Everyday
 Once a week
 For work only
 Not often
5. What would be your preferred method of delivery for health information?
 Face to face sessions over 6-8 weeks
 Computer/website
 Computer/ gaming technique (i.e., video game, avatar)
 Mobile app on cell phone

Conclusion

As technology continues to expand and become a major component of health information delivery, we should continue to explore the various culture and social influences of different population groups and how these influences impact technology use. Recognizing that not all groups embrace technology in the same way is important in order to ensure that the health

outcomes for diverse groups are met. Technology has proven beneficial in health information, however, we cannot take a “one size fits all” approach in the way we use it. African American men are a vulnerable population group with a number of health disparities. As we develop and implement health promotion and prevention activities for African American men to address these disparities, their perspectives of what works and does not work for them should be heard and analyzed.

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