

## OBSERVATIONS

## Computer and Internet Use of Urban African Americans With Type 2 Diabetes in Relation to Glycemic Control, Emergency Department Use, Diabetes-Related Knowledge, and Health Literacy

Web-based diabetes interventions favorably influence process and clinical outcomes, but few studies have focused on urban African Americans, in part because of the perception that they lack adequate access, experience, or interest (1). Black-white disparities in diabetes-related knowledge and health behaviors are natural targets for such interventions. We hypothesized that urban African Americans with suboptimal diabetes control, low diabetes-related knowledge, and/or low health literacy would have the access, experience, and interest to use Web-based diabetes interventions.

We sought to characterize computer/Internet use in a sample of urban African American adults with type 2 diabetes participating in the randomized controlled trial Project Sugar 2 (2). We queried subjects on general computer skills and interest in a group with suboptimal diabetes control, frequent emergency department (ED) visits, low diabetes-related knowledge, or low health literacy. Suboptimal diabetes control was defined as either A1C >7.0% or blood pressure >130/80 mmHg at the 24-month follow-up visit. Frequent ED visitation was defined as more than one visit during 24 months, determined from insurance claims. The Diabetes Knowledge (DKN) scale and the short test of functional health literacy were administered to a randomly selected

representative subset of 112 participants at baseline. This study was approved by the Johns Hopkins University School of Medicine Institutional Review Board.

Of the 542 Project Sugar 2 participants eligible for the computer/Internet survey, 457 (84%) interviews were completed. Sociodemographic and clinical characteristics of the survey participants did not differ from nonresponders and are summarized in an article published previously (3). Respondents primarily were middle-aged (mean age 57 years), were female (73%), and had a 60% high school graduation rate. Of participants, 53% had elevated A1C and 65% were above the blood pressure goal. During the 24-month period, 22% had more than one ED visit. The DKN score of those tested was in the range 0–12 with a mean of 5. Few (18%) had inadequate levels of health literacy.

For all respondents, 82% either knew how to use a computer or were willing to learn. Results were similar for those with suboptimal control: 85% for those with elevated A1C and 80% for those with elevated blood pressure. Likewise, the figure was 80% for those with more than one ED visit, 88% for those with a below-average DKN score, and 83% for those with an inadequate short test of functional health literacy. The main limitation of this study is the lack of data more recent than 2004.

Web-based diabetes interventions have been proven to be effective at improving health status, self-efficacy, and physical activity, as well as process and clinical outcomes (1). We have found that, as early as 2004, over 80% of urban African Americans with suboptimal diabetes control either knew how to use a computer or were willing to learn. Contrary to conventional wisdom, figures were similar in a subset of respondents with low DKN scores and inadequate health literacy. The main implication is that Web-based diabetes interventions might be unexpectedly attractive tools for addressing diabetes-related health disparities in urban African Americans.

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