Diabetes and Your Eyes: A Pilot Study on Multimedia Education for Underserved Populations


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ABSTRACT

There is a growing interest in the pursuit of consumer health information by individuals with chronic diseases. However, there is little data available regarding the use by underserved populations. The purpose of this pilot study was to create a multimedia lesson providing instruction on diabetes preventive care (i.e. dilated eye examinations) and investigate its usability and interest among these targeted outpatients. A touch screen 'kiosk' was incorporated into a clinical waiting room specifically for patient education.

BACKGROUND

More recently, touch screen 'kiosks' are being investigated in clinical environments. However, there are significant barriers to widespread use among vulnerable populations. These are related to the digital divide in access to technology, computer experience, health literacy, language and cultural differences. To overcome these challenges in providing consumer health information, we created and implemented a new multimedia application for an underserved patient population with diabetes.

METHODS

Focus groups of African-American and Latino diabetic patients were reviewed, with regards to barriers in obtaining yearly eye examinations. A lesson plan (in English and Spanish) was created based on the ultimate objective of patients obtaining eye examinations. To address language and cultural issues, additional patients were recruited to provide digitally videotaped testimonials. A total of 16 African-American and 16 Latino diabetic patients were recorded in English and Spanish respectively, answering open ended questions freely without scripting. Common example barriers discussed by patients included: fear, denial, religion/faith, pain, and insurance. A Pentium II computer with a touch screen was installed in the Internal Medicine Center at the Outpatient Care Center in an area immediately adjacent to the waiting room. A convenience sample of 56 patients then viewed the multimedia application and completed a survey. Survey questions addressed both the software application as well as attitudes toward obtaining an eye exam.

RESULTS

Overall, a majority of these subjects had no more than some high school education (70% of the English group, 83% of the Spanish group); and many had never had taken any diabetes education classes before. With respect to standard of care, only 15 (56%) of the English group and 15 (52%) of the Spanish group have undergone dilated eye examinations. Many have reported limited or no computer usage previously (48% of the English group, 14% of the Spanish group described previous computer usage). Reported ease of use was 2.15 and 1.48 for the English and Spanish groups respectively (F(1, 26) = 12.5; p = .002; in a scale from 1 = very easy to 5 = very hard).

DISCUSSION

Despite common barriers to accessing health information, there was clear interest and use by underserved patient groups. Most individuals felt the multimedia was 'easy' or 'very easy' to use and easy to comprehend. Unfortunately, activities that may better translate a health promotion message and provide education may require greater interaction than simple directions (such as touching the screen). Further research is needed to better understand the cost/benefit ratio between cost of production and implementation and benefit of tailoring material to a specific target audience.

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