Acceptance of Diabetes Education via the Telephone

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Abstract

Patients require education and information as they engage in self-help, self-care, and disease management activities. The objective of this study was to explore the acceptance of voice technologies in diabetes patient education. Eighteen participants listened to a total of 324 diabetes educational messages and were provided the opportunity to rate the usefulness of each message. This study demonstrated that brief telephone-based education can be acceptable and useful.

Methods

A study was conducted to evaluate the acceptance of brief educational messages recorded by a certified diabetes educator and delivered via the telephone to 18 participants with diabetes. In addition to receiving usual care from their physician or diabetes educator, participants were telephoned three times per week to receive the educational messages. The messages could be received 24 hours per day seven days per week. Participants communicated with the educational database by using the keypad on their touch-tone phone. The intervention consisted of 24 four-minute messages on the topics of knowledge and prevention, glucose level, diet and activity, and management and coping. A message was only provided when the phone was answered and the correct personal identification number (PIN) was provided. The participants had the opportunity to rate the usefulness of each message after they listened to it. Security and privacy policies were addressed in the system by using a user identification number and password authentication.

Results

The 18 participants listened to a total of 324 calls over a 12 week intervention period from February 1 through April 24, 2004. Twelve (66.7 percent) of the participants were female. The average age of the participants was 51.1 ± 15.3 years. The average time since the diagnosis of diabetes was 9.3 ± 11.6 years. Thirteen participants (72.2 percent) had previously attended a diabetes patient education program. The participants listened to an average of 18 messages each. Based on a review of the length of each successful call and the response to the usefulness question at the end of each message, the complete messages were played 100 percent of the time when a call was made to a participant and a correct PIN was entered. In addition to the 324 successful calls, there were also 284 calls that reached an answering machine, 110 calls that were not picked up, 24 hang ups, 21 occurrences of the wrong PIN entered, and 153 occurrences of no PIN entered. Messages were successfully delivered to participants 35.4 percent of the time.

Of the 324 messages that were listened to, 14 messages (4.32%) were not rated (i.e., no answer was given). The 310 rated messages received an overall score of 3.38 ± 0.85 on a four-point Likert scale with 4 representing very useful, 3 representing somewhat useful, 2 representing somewhat useless, and 1 representing useless. Of the 310 rated messages, 178 were rated as very useful; 89 were rated as somewhat useful; 27 were rated as somewhat useless; and 16 were rated as useless. Three of the messages, Self-care & Monitoring (3.00 ± 0.79), Smoking Cessation (2.25 ± 1.54), and Alcohol (2.56 ± 1.33), received average scores of 3.00 or lower. The Smoking Cessation message received a polarized review with five participants reporting the message was very useful and seven participants reporting the message was very useless. The Risk Factors (3.20 ± 0.68) message received the next lowest score. The Exercise & Physical Activity (3.73 ± 0.47) and the Stress Management (3.71 ± 0.49) messages received the highest scores.

Discussion

Numerous studies have documented that the majority of patients with chronic diseases, such as diabetes, do not receive the benefits of widely accepted recommendations. Health care organizations and regions that due to a lack of human and financial resources can not afford a diabetes educator can benefit from a telephone-based diabetes educational intervention. The telephone diabetes educational intervention may be used alone or as a supplement to existing diabetes education.