

Feasibility and Usability of a Text Message-Based Program for Diabetes Self-Management in an Urban African-American Population

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Abstract

Purpose:

We pilot-tested a text message-based diabetes care program in an urban African-American population in which automated text messages were sent to participants with personalized medication, foot care, and appointment reminders and text messages were received from participants on adherence.

Methods:

Eighteen patients participated in a 4-week pilot study. Baseline surveys collected data about demographics, historical cell phone usage, and adherence to core diabetes care measures. Exit interview surveys (using close-coded and open-ended questions) were administered to patients at the end of the program. A 1-month follow-up interview was conducted surveying patients on perceived self-efficacy. Wilcoxon signed-rank tests were used to compare baseline survey responses about self-management activities to those at the pilot's end and at 1-month follow-up.

Results:

Eighteen urban African-American participants completed the pilot study. The average age was 55 and the average number of years with diabetes was 8. Half the participants were initially uncomfortable with text messaging. Example messages include "Did you take your diabetes medications today" and "How many times did you check your feet for wounds this week?" Participants averaged 220 text messages with the system, responded to messages 80% of the time, and on average responded within 6 minutes. Participants strongly agreed that text messaging was easy to perform and helped with diabetes self-care. Missed medication doses decreased from 1.6 per week to 0.6 ($p = .003$). Patient confidence in diabetes self-management was significantly increased during and 1 month after the pilot ($p = .002$, $p = .008$).

Conclusions:

Text messaging may be a feasible and useful approach to improve diabetes self-management in urban African Americans.

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Abbreviations: (CDE) Certified Diabetes Educator, (DSE) diabetes self-efficacy scale, (HIT) health information technology, (NIDDK) National Institute of Diabetes and Digestive and Kidney Diseases, (PCG) primary care group, (SMS) Short Message Service

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