

## Mobile Phone-Based Video Messages for Diabetes Self-Care Support

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### Abstract

#### **Background:**

This study examined whether mobile phone-based, one-way video messages about diabetes self-care improve hemoglobin A1c (A1C) and self-monitoring of blood glucose (SMBG).

#### **Methods:**

This was a 1-year prospective randomized trial with two groups. The active intervention lasted 6 months. The study enrolled 65 people with A1C >8.0% who were established (>6 months) patients in the endocrinology clinics of the Walter Reed Health Care System. Participants were randomized to receive “usual care” or self-care video messages from their diabetes nurse practitioner. Video messages were sent daily to cell phones of study participants. Hemoglobin A1c and SMBG data were collected at 0, 3, 6, 9, and 12 months.

#### **Results:**

Participants who received the messages had a larger rate of decline in A1C than people who received usual care (0.2% difference over 12 months, adjusting for covariates;  $p = .002$  and  $p = .004$  for the interaction between time and group and for the quadratic effect of time by group, respectively). Hemoglobin A1c decline was greatest among participants who received video messages and viewed >10 a month (0.6% difference over 12 months, adjusting for covariates;  $p < .001$  for the interaction between time and group and the quadratic effect). Self-monitoring of blood glucose metrics were not related to the intervention.

#### **Conclusions:**

A one-way intervention using mobile phone-based video messages about diabetes self-care can improve A1C. Engagement with the technology is an important predictor of its success. This intervention is simple to implement and sustain.

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**Abbreviations:** (A1C) hemoglobin A1c, (BP) blood pressure, (mhealth) mobile health, (NP) nurse practitioner, (SD) standard deviation, (SMBG) self-monitoring of blood glucose, (SMS) short message service

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