SCIENCE-IN-BRIEF

TURNING SCIENCE INTO ACTION

Can Text Messaging Improve Medication Adherence in Adults with Coronary Heart Disease?

The following is a synopsis of "A Text Messaging Intervention to Promote Medication Adherence for Patients with Coronary Heart Disease: A Randomized Controlled Trial," published in the February 2014 issue of *Patient Education and Counseling*.

What is already known on this topic?

Coronary heart disease (CHD) is a leading cause of death and disability worldwide. CHD leads to more than 385,000 deaths per year in the United States and costs the country approximately $108.9 billion dollars in health care costs. Although poor medication adherence is strongly associated with adverse outcomes for CHD patients, including hospital readmission, disability, and death, rates of medication nonadherence for heart attack patients range from 13% to 61%.

Using technology to facilitate self-monitoring, positive reinforcement, and remote coaching can be a practical and inexpensive way to improve medication adherence. In the past decade, mobile health (mHealth) efforts have included using mobile phones to enhance patient-delivered health care. Evidence of mHealth's impact on medication adherence is limited but shows potential to improve medication adherence for managing chronic diseases such as CHD.

What is added by this document?

The researchers conducted a 30-day randomized clinical trial to evaluate the effectiveness of an mHealth intervention that used personalized text messages (TMs) to increase adherence to antiplatelet and statin medications among patients with CHD following release from the hospital. The study also explored the feasibility of and patient satisfaction with the mobile phone–based intervention.

The control (No TM) group received usual care; the telemedicine education (TM Education) group received a total of 14 health education TMs; and the telemedicine reminders plus health education (TM Reminders + Education) group received 74 TMs of medication reminders and health education messages.

Examples of TMs included:

- "Remember to see your cardiologist and/or primary physician 1–2 weeks after your hospitalization." (TM Education)
- "John, take Plavix 75 mg at 9:00 AM. Respond with 1." (TM Reminders + Education)

Although the interventions did not significantly influence patients' statin medication adherence, most outcomes for antiplatelet medication adherence differed significantly between groups (see table).

Table. Adherence to Antiplatelet Medication

	TM Reminders + Education (*n* = 24)	TM Education (*n* = 19)	No TM (*n* = 25)	*p* value
Average doses taken	28.2 ± 3.6	28.2 ± 4.1	23.7 ± 8.3	0.053
Percentage of prescribed doses taken	93.7 ± 11.9	95.8 ± 9.5	79.1 ± 27.7	0.03
Percentage of correct number doses taken	88.0 ± 14.0	87.2 ± 16.5	72.4 ± 27.4	0.047
Percentage of doses taken on schedule	86.2 ± 15.4	85.7 ± 18.2	69.0 ± 29.2	0.04

Data presented as mean ± standard deviation.

Participants in the intervention groups reported high satisfaction with receiving TMs. Of those who received TMs, only 7.6% reported technical difficulties with receiving the messages. Most participants (88.6%) strongly or moderately agreed that the TM feature on their mobile phone was easy to use.

What are the applications for these findings?

Results from this study suggest that mHealth may be useful for improving medication adherence during the vulnerable time for CHD patients following discharge from the hospital. The high satisfaction rating of the program supports the feasibility of TM-based mHealth interventions. Further research is needed to assess additional intervention factors, such as target population, unintended effects, and cost analysis.

Resources

American Heart Association
Medication Adherence—Taking Your Meds as Directed
www.heart.org/HEARTORG/Conditions/More/ConsumerHealthCare/Medication-Adherence---Taking-Your-Meds-as-Directed_UCM_453329_Article.jsp

Centers for Disease Control and Prevention
Heart Disease Fact Sheet
www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_disease.htm

National Institutes of Health
mHealth—Mobile Health Technologies
http://obssr.od.nih.gov/scientific_areas/methodology/mhealth

Citation

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