Lifestyle focused text messaging results in improvement in cardiovascular risk factors

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A simple, low-cost automated program of semi-personalized mobile phone text messages supporting lifestyle change led to improvement in low-density lipoprotein cholesterol (LDL-C) levels, blood pressure, body mass index, and smoking status in patients with coronary heart disease, according to a study in the September 22/29 issue of *JAMA*.

Globally, cardiovascular disease is the leading cause of death and disease burden. Cardiovascular disease prevention, including lifestyle modification, is important but underutilized. Mobile phone text messages to remind, encourage, and motivate patients regarding the adoption of healthy lifestyles might be useful, but there has been limited scientific evaluation of these interventions, according to background information in the article.

Clara K. Chow, M.B.B.S., Ph.D., of the George Institute for Global Health, University of Sydney, Australia, and colleagues randomly assigned patients with proven coronary heart disease to receive 4 text messages per week for 6 months in addition to usual care (intervention group; n = 352) or usual care (control group; n=358). Text messages provided advice, motivational reminders, and support to change lifestyle behaviors. Messages for each participant were selected from a bank of messages according to baseline characteristics (e.g., smoking) and delivered via an automated computerized message management system. The average age of the patients was 58 years; 53 percent were current smokers.

At six months, levels of LDL-C were lower in intervention participants (79 mg/dL vs 84 mg/dL), as was systolic blood pressure (128 mm Hg vs 136 mm Hg) and body mass index. After six months, there was also a lower percentage (26 percent vs 43 percent) of smokers in the intervention group, who also reported an increase in physical activity. The proportion of patients achieving 3 of 5 guideline target levels of risk factors were substantially higher in the intervention group vs the control group (63 percent vs. 34 percent).

The majority of participants reported the text messages to be useful (91 percent), easy to understand (97 percent), and appropriate in frequency (86 percent).

"The duration of these effects and hence whether they result in improved clinical outcomes remain to be determined," the authors conclude.

Zubin J. Eapen, M.D., M.H.S., and Eric D. Peterson, M.D., M.P.H., of the Duke Clinical Research Institute, Durham, N.C., (Dr. Peterson is also Associate Editor, JAMA) comment in an accompanying editorial.

"Health care needs to be challenged to make its evaluation as nimble as that of technology. The U.S. health care system needs to be capable of testing novel low-risk interventions such as text messaging in the context of routine clinical care. Creating an agile and clinically integrated research framework that rigorously evaluates all interventions—drug, device, or digital—is a collective responsibility and challenge for both app developers and health care practitioners. Solving this dilemma can enable the development and use of pragmatic, scalable, and evidence-based solutions that can address a massive problem like cardiovascular disease."

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