

# Texting 1 million people in India improves diabetes prevention

August 8 2016

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A study that sent twice-weekly text messages to a million people in India advising them to exercise, eat less fat, and eat more fruits and vegetables increased these health behaviors known to prevent diabetes, reports new

research from Northwestern Medicine and Arogya World, a global health non-profit organization.

This effort is the first to use the power and reach of mobile phones to change [diabetes](#) risk behaviors in a large number of people from different parts of a vast country like India. It has implications for [diabetes prevention](#) in low and middle-income countries.

In India, the diabetes burden is very high. An estimated 66 million people live with the disease, and 1 million die from it each year. Indian Americans also are hard hit with diabetes. The diabetes prevalence in this population is four times higher than among Caucasians in the United States.

Researchers compared composite scores of the experimental group's fruit, vegetable and fat intake and exercise with the control group. While people in both the experimental and control group improved their [health behaviors](#) over six months, the experimental group improved significantly more.

Almost 40 percent more people improved their health behaviors as a result of the texting (299 showing improvement in the experimental group versus 185 in the control group), based on data in the paper.

The study will be published August 8 in the *Journal of Medical and Internet Research*.

"Noncommunicable diseases, one of the leading health and development challenges of the century, demand simple, proven, cost-effective prevention solutions that can be easily deployed at the population level," said Nalini Saligram, founder and CEO of Arogya World. "Our mDiabetes study suggests mobile health technology is a smart solution and has broad implications for diabetes prevention at the [population](#)

[level](#) in low and middle-income countries."

"This shows the potential for even the most basic of mobile phones to be used as a viable tool to deliver public health messages on a large scale across a diverse population," said lead study author Angela Fidler Pfammatter, research assistant professor in preventive medicine at Northwestern University Feinberg School of Medicine. "And you just need a basic [mobile phone](#). This can make an impact."

Bonnie Spring, director of the Center for Behavior and Health at Feinberg, collaborated on the research. Sandhya Ramlingam of Arogya World implemented the behavior change study.

The study gathered responses from nearly 1,000 people who received text messages as part of Arogya World's mDiabetes initiative and compared them to responses from a similar number of people who didn't receive the text messages. The randomly chosen 1,000 individuals, who were surveyed by phone in the language of their choice, were considered a representative sample of the one million participants.

The study scored for fruit, vegetable and fat consumption as well as exercise in participants at baseline and six months. There were 943 people in the [control group](#), 982 in the experimental one.

Arogya World partnered with Nokia during 2012-2013 on mDiabetes to send text messages on diabetes and its prevention in 12 languages, twice a week for six months, to 1 million of its subscribers from all over India who opted in.

The 56 text messages were developed with Emory University and culturally adapted for India with extensive consumer feedback.

Northwestern University researchers contributed to the study design and

data analysis. Using rigorous statistical analysis to correct for baseline differences, and by scoring each study participant on positive and negative behaviors, the authors showed clear health behavior differences between those who received the text messages and those who did not.

Noncommunicable diseases include heart disease, diabetes, cancer and chronic lung diseases. According to the World Health Organization, 80 percent of heart disease, 80 percent of type 2 diabetes and 40 percent of cancers are preventable with three lifestyle changes—avoiding tobacco, eating healthy foods and increasing physical activity.

Indians get diabetes in their 30s and 40s, 10 years earlier than most Americans. Two-thirds of the population of India is under age 35. Mobile phone use is widespread throughout India, making this an ideal way to deliver [health](#) messages.

In addition to the [text message](#) program, Arogya World has developed a mobile app, myArogya, to help working Indians prevent chronic disease

**More information:** [arogyaworld.org/](http://arogyaworld.org/)

Provided by Northwestern University

Citation: Texting 1 million people in India improves diabetes prevention (2016, August 8) retrieved 27 April 2024 from

<https://medicalxpress.com/news/2016-08-texting-million-people-india-diabetes.html>

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