

Using Information Campaigns to Improve Covid-19 Health Awareness Among Rural Households in Bangladesh and India

Researchers:

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Sector(s): Health

Location: Kanpur Nagar district, Uttar Pradesh, India; Khulna and Satkhira districts, Bangladesh

Sample: 6485 households in Bangladesh; 1,680 households in India

Research Papers: Raising Health Awareness in Rural Communities: A Randomized Experiment in Bangl...

Partner organization(s): Global Development & Research Initiative (GDRI) Foundation, Indian Institute of Technology Kanpur

People living in rural areas often lack access to reliable sources of information due to limited digital connectivity, poor infrastructure, and low literacy. Researchers conducted a randomized evaluation to test the impact of phone-based information campaigns on people's knowledge about Covid-19 precautions and their compliance with health guidelines in rural areas of Bangladesh and India. Researchers found that disseminating information through both text messages and phone calls was the most effective means to improve knowledge about Covid-19 precautions among rural populations, followed by communications only via phone calls.

Policy issue

Over two-thirds of the population in low-income countries live in rural areas. In the rural setting, limited digital connectivity, poor infrastructure, and low literacy act as barriers to communication and information delivery, which often have harmful consequences affecting personal and public welfare. Additionally, information overload at the influx of new information, such as at the onset of a new health crisis, can easily propagate misinformation in rural areas and mislead people into adapting health-impairing behavior. This, unfortunately, was the case in many regions at the onset of the Covid-19 pandemic. As a result, rumors, myths, and misconceptions about Covid-19 remain rampant among rural populations, which trivializes the risks of Covid-19 and worsens the public health crisis.

Limited health literacy among people worldwide makes spreading information about simple health-preserving practices such as hand washing and social distancing vital to controlling the spread of diseases. While people living in rural areas often do not have access to the internet, mobile phone ownership is prevalent among rural populations, providing governments and public health agencies an avenue through which to disseminate reliable health information. Can rapid information campaigns delivered by calling or texting mobile phones increase knowledge of and adherence to public health guidelines among rural populations?

Context of the evaluation

In densely populated countries like India and Bangladesh, where this evaluation took place, the spread of Covid-19 represented a unique and urgent challenge. India began imposing lockdowns to prevent the transmission of Covid-19 on March 24, 2020. By the end of August 2020, the country registered over three million confirmed Covid-19 cases and over 65,000 deaths¹. Bangladesh, the most densely populated country in the world, experienced a sudden rise in Covid-19 infections in late March-early April 2020.

In response, a nationwide lockdown was implemented on March 26, 2020. Between March and August 2020, Bangladesh had over one million confirmed cases and 22,000 deaths².

In both countries, governments and NGOs took various initiatives to inform the public about Covid-19 precautions, including television, radio, social media, and text message campaigns. However, many of these interventions had limited reach in rural regions across countries. Around 60 percent of the population in Bangladesh and 65 percent of the population in India live in rural areas where radio, television, computer, and smartphone ownership is low. Basic mobile phones are the most commonly owned piece of technology in both regions, with around 87 percent of the total population in India and 94 percent of rural households in Bangladesh owning at least one mobile phone. Despite most rural households in both areas having access to text message campaigns, low literacy rates mean that not all who received the messages could make use of the information. In the rural Khulna and Satkhira districts of the Khulna division in Bangladesh and the Kanpur Nagar district of Uttar Pradesh in India, literacy rates are only 72 percent and 70 percent, respectively, making text messages alone an ineffective way to communicate public health information to Covid-vulnerable rural populations.



Details of the intervention

Researchers partnered with the Global Development Research Initiative (GDRI) and the Development Policy Research Network (DPRN) to test the impact of rapid health information

campaigns in rural areas of Bangladesh and India using text messages and phone calls on people's knowledge about Covid-19 precautions and their compliance with health guidelines.

The information campaigns shared information about social distancing, handwashing, and other pandemic safety precautions following the guidelines of the World Health Organization, UNICEF, and local ministries of health.

The research team recruited 6,485 households from 420 villages in the Khulna and Satkhira districts of Bangladesh and 1,680 rural households from 40 villages in the Kanpur district of Uttar Pradesh, India.

Villages in Bangladesh were randomly selected to receive one of three interventions, while in India, individual households were randomly assigned to one of the three intervention groups:

- *Text messages only*: 2,361 households in Bangladesh and 651 households in India received text messages composed in the local language, Bangla in Bangladesh and Hindi in India. Since most mobile phone users in each country often receive text messages on Covid-19 precautions from the government and other organizations, this served as a comparison group.
- *Phone calls only*: 2,031 households in Bangladesh and 601 households in India received direct phone calls from the GDRI and DPRN respectively. Phone calls lasted around 10-15 minutes.
- *Text messages and phone calls*: 2,093 households in Bangladesh and 518 households in India received both text messages and phone calls.

All households were reached out twice, with a month gap between the first and second time. The second round of phone calls also included updates on infections, deaths, and healthcare capacity limitations to facilitate additional conversation.

The intervention took place between early April and May 2020. Between late June and early July 2020, researchers conducted a follow-up survey over the phone to measure participants' awareness of Covid-19 and compliance with Covid-19 guidelines.

Researchers also asked questions regarding participants' concerns about their household health, finances, food security, and the occupation of the main earning member. Researchers then conducted a second follow-up survey in Bangladesh in August 2020 on 1,600 randomly selected female participants in order to measure if compliance persisted after the end of the intervention. Demographic and socioeconomic information about the selected households was also collected from previous surveys by the implementing organizations.

The study does not have a 'pure' comparison group because mobile phone users often receive text messages on Covid-19 precautions from the government and other organizations. Furthermore, on humanitarian grounds, the researchers wanted to reach out to as many rural households as possible to spread awareness about the coronavirus.

Results and policy lessons

Researchers found that disseminating information through both text messages and phone calls was the most effective means to improve knowledge about Covid-19 precautions among rural populations, followed by communications only via phone calls.

Awareness: Both phone calls and phone calls with text messages were more effective than text messages alone when it came to raising awareness of Covid-19 precautions. This was measured by the number of correct Covid-19 health precautions mentioned by the respondents. On average, participants who only received text messages correctly reported 1.5–2.1 of the five precautions, while those who received phone calls reported 3.7–4.4 correct precautions, and those who received both phone calls and text messages correctly reported 4.2–4.8 precautions. Compared to the group that only received text messages, the number of participants who correctly identified all five precautions, what the researchers refer to as complete awareness, increased by 45–85 percentage points among the groups that received both text messages and phone calls. Meanwhile, those who received only phone calls experienced an increase of 28–53 percentage points in complete awareness relative to the comparison group.

Compliance: Participants in both countries who received either phone calls only or phone calls and text messages were also more likely to comply with health guidelines than those who received only text messages. Researchers constructed a standardized index based on whether or not the participants reported complying with social distancing measures. Relative to the average

compliance scores of the text messages only groups, compliance scores were between 1–2.2 standard deviations higher for the phone calls only groups and 1.5–2.7 standard deviations higher for the phone calls and text messages group. The second follow-up survey in Bangladesh showed that the effects on compliance persisted after three months.

Differential impacts: Researchers found that, in Bangladesh, the effectiveness of both of the phone call interventions had different impacts across demographic and socioeconomic conditions of participants. They found much higher rates of compliance for women compared to men. They also observed differential impacts based on age, religion, education, food security, and income. In India, researchers also observed differential impacts based on religion and food security. However, they did not observe differences in compliance by any other measured demographic indicators.

Cost-effectiveness: Taking the costs of the interventions into consideration, the research team spent roughly US\$1.92 per person in treatment groups involving phone calls. In contrast, the average cost of the text message treatment was only US\$0.08 per person. Therefore, for each additional dollar spent on phone calls, compliance in Bangladesh improved by 0.56–0.82 standard deviations and in India by 1.19–1.45 standard deviations. While pre-recorded voice messages are possible lower-cost alternatives to phone calls, further research is needed to look into their efficacy and comparability with direct phone calls.

Altogether, low-cost brief phone calls can be very effective in encouraging low-income rural communities to practice health-preserving behavior. While the exact effectiveness of phone call information campaigns depends on their contexts, they can help governments and community organizations bypass barriers to communication such as illiteracy or lack of internet and technology access. Organizations may also consider using phone calls to facilitate information campaigns in other contexts, such as addressing misinformation about climate change or encouraging voting in rural areas.

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1. World Health Organization. Novel Coronavirus Disease (COVID-19) Situation Update Report - 31. India: World Health Organization, 2020.
 2. World Health Organization. Morbidity and Mortality Weekly Update (MMWU) - 76. Bangladesh: World Health Organization, 2020.