

New Study is the First Randomized Trial to Show that Wearing Masks Reduces COVID-19 in a Real-World Setting

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Washington D.C. >> Getting more people to wear masks, particularly surgical masks, is effective in reducing COVID-19, according to a [new study](#) led by researchers from Yale University, Stanford Medical School, University of California, Berkeley, and Innovations for Poverty Action (IPA). The randomized evaluation conducted in Bangladesh is the largest and most rigorous trial of its kind to date, testing the effectiveness of masks in a real-world setting with more than 340,000 adults.

[The paper](#) reports that increased mask wearing-- as a result of a community-level mask distribution and promotion campaign-- led to a significant reduction in the number of people with COVID-19, based on symptom reporting and SARS-CoV-2 antibody testing. Twenty-nine out of every 100 people began wearing masks because of the intervention. Surgical masks were particularly effective in reducing COVID-19, preventing 1 in 3 symptomatic infections among community members 60 years and older.

"The reduction in symptomatic cases is impressive, particularly when you consider that this was a community setting, not a lab, and less than half of people who received the intervention were wearing masks," said Dr. Ashley Styczynski, a co-author on the study and an infectious disease fellow at Stanford's Division of Infectious Diseases & Geographic Medicine.

The researchers point to the findings on surgical masks as being particularly policy-relevant at this moment. "Our results are consistent with lab research suggesting surgical masks are effective at reducing COVID-19," said co-author Laura Kwong, an assistant professor of environmental health sciences at UC Berkeley's School of Public Health. "These results suggest that we could prevent unnecessary death and disease if we got people to wear high-performance masks, such as surgical masks, in schools, workplaces, shopping centers, places of worship, and other indoor spaces."

Mushfiq Mobarak, an economist at Yale who hails from Bangladesh and is a senior author on the study, realized early on in the crisis that as one of the most densely populated countries in the world and with a relatively weak health system, Bangladesh was very vulnerable to COVID-19. "We thought that masks could be an important line of defense in Bangladesh,

particularly given likely delays in mass administration of vaccines, but most people weren't wearing them. We therefore also had to uncover cost-effective ways to change community-wide mask wearing norms, and are now working with governments in South Asia to scale up those strategies," Mobarak said.

Researchers partnered with IPA and local institutions including Aspire to Innovate (a2i), Bangladesh's Ministry of Health and Family Welfare, the Bangladesh Medical Research Council, Green Voice, and North South University to design and evaluate ways to increase mask-wearing and provide the international community with strong evidence to inform public health decisions.

The randomized controlled trial was carried out among 341,830 adults in 600 villages in rural and peri-urban areas of Bangladesh between November 2020 and April 2021. Three hundred villages received the mask promotion campaign and the other three hundred made up the comparison group and weren't given the intervention at the time of the study. In order to detect differences in COVID-19, the researchers needed a very large sample of people.

To measure the impact on COVID-19, adults in the study communities were first surveyed to determine if they experienced symptoms of COVID-19. Blood was then collected from consenting, symptomatic individuals, a total of 10,952 people, and analyzed for SARS-CoV-2 antibodies. The research team is planning a follow-up study to assess the impact of mask-wearing on asymptomatic and symptomatic infections.

Prior observational research has compared the rates of COVID-19 among people who wear masks with the rates among people who do not wear masks. The risk with these comparisons is that people who choose to wear masks may also adopt other behaviors that reduce their risk. This study was designed to overcome this limitation. Whole communities were randomly assigned to receive the mask promotion intervention or to serve as a comparison community.

"The randomized design provides confidence that the lower rates of COVID-19 in the intervention communities resulted from the mask promotion," said Dr. Stephen Luby, co-author and a professor of medicine and infectious disease at Stanford. "These results illustrate the remarkable protection that low-cost masks provide," Dr. Luby said.

In order to increase mask-wearing in the treatment group, the research team implemented a wide variety of approaches. "We wanted to create an environment where wearing a mask was the expected behavior," said Jason Abaluck, a professor of economics at Yale. "Our strategies were designed to create a social norm: people have masks, know why they are supposed to wear them, and also know that if they don't wear a mask, someone might politely ask them to wear one."

A core set of four strategies, now termed the "NORM" model, proved effective, tripling mask wearing from 13 percent in the comparison group to 42 percent in the treatment group. This "N-O-R-M model" – which stands for "No-cost mask distribution, Offering information, Reinforcement to wear masks, and Modeling by local leaders" – is now being scaled up to

reach over 100 million people in several countries given its demonstrated impact. Asif Saleh, the executive director of BRAC, one of the main actors scaling up the approach, said, "This effective model is a critical component of any large scale COVID-19 response, especially in rural areas with limited vaccine access, and the NORM team has been very helpful in ensuring we are able to apply this evidence to save lives."

The research team gratefully acknowledges [GiveWell](#), which recommended a grant from the Effective Altruism Global Health and Development Fund to support this research.

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September 01, 2021