Accelerating Changes in Norms about Social Distancing to Combat COVID-19 [*]

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Abstract:

We seek to support the Mozambican COVID-19 response, in collaboration with the government's health research center for the central region, by following up on a study sample of a randomized controlled trial in Mozambique. Sample households will be contacted by phone and administered several rounds of surveys regarding COVID-19 knowledge, beliefs, and behavior. We will randomize novel over-the-phone interventions to test if we can encourage social distancing by accelerating changes in community norms. Our findings will support the Mozambican response by informing policymakers of the public's COVID-19 knowledge and behaviors and on which public health messaging strategies are best to pursue given limited resources.

Keywords: COVID-19, social distancing, health behavior, Mozambique

JEL codes: I12 (health, general), I12 (health behavior), D90 (micro-based behavioral economics, general)

TRIAL INFORMATION:

1. **Context:**

   Households are drawn from an ongoing impact evaluation of a community health program in Mozambique. Please refer to the registered trial "Direct and Spillover Impacts of a Community-Level HIV/AIDS Program: Evidence from a Randomized Controlled Trial in Mozambique":
   https://www.socialscienceregistry.org/trials/3990

2. **Trial Dates:**

   Expected Trial Start Date: **2020-07-10**
   Expected Intervention Start Date: **2020-08-26**
   Expected Intervention End Date: **2020-09-16**
   Expected Trial End Date: **2020-12-31**

3. **Institutional Review Board (IRB) Approvals:**

   University of Michigan Health Sciences and Behavioral Sciences Institutional Review Board
   IRB Approval Date: 2020-04-15
   IRB Approval Number: HUM00113011

   Mozambique Ministry of Health National Committee on Bioethics for Health (CNBS)
   IRB Approval Date: 2020-07-01
   IRB Reference Number: 302/CNBS/20

4. **Sponsors:**

   Innovations for Poverty Action (IPA)
   New Haven, CT, USA
   https://www.poverty-action.org/

   Abdul Latif Jameel Poverty Action Lab (J-PAL)
   Cambridge, MA, USA
   https://www.povertyactionlab.org/

   Michigan Institute for Teaching and Research in Economics (MITRE)
   Ann Arbor, MI, USA
   https://lsa.umich.edu/econ/mitre.html

5. **Partners:**

   Beira Operations Research Center (CIOB)
   Beira, Mozambique

EXPERIMENTAL DETAILS:

1. **Study Sample:**

The study population are households included in the ongoing impact evaluation of the FCC program in Mozambique. The households are distributed across 76 communities in three provinces of Mozambique (Manica: Manica, Chimoio, Gondola; Sofala: Dondo, Nhamatanda; Zambézia: Namacurra, Nicoadala). Compared to other communities in Mozambique, the study areas are relatively accessible to main transport corridors (highways and ports). They are thus important geographic conduits for infectious disease, and this makes them important areas in which to conduct research on combating COVID-19.

The sample will be a subset of households with phone numbers who are participating in the ongoing FCC randomized controlled trial. Given budget and past experience with phone contact rates in our sample, we are targeting a sample size of 2,000 households.

2. **Experimental Design:**

The interventions will be tested using a randomized controlled trial study design. The interventions will be randomly assigned to participants as different treatment arms (including a control group). We randomize over-the-phone interventions to test if we can encourage social distancing by accelerating changes in community norms. We consider the intent-to-treat (ITT) effect of the randomized interventions on a standardized version of our outcomes: indices of social distancing behavior. The social distancing treatments require input from the Round 1 Survey. Therefore, all interventions will be implemented in the Round 2 Survey to allow for comparison across treatments. Outcome data will be collected in the Round 3 Survey.

3. **Randomization:**

Randomization will occur at the household level and be applied to all households recruited into the Round 1 Survey – hence, it will occur after the Round 1 Survey but before the Round 2 Survey. Randomization will be stratified by the 76 community designations. Randomization is done using Stata/SE 15 (Stata Corporation, College Station, TX, USA). Based on our power analysis, we limit to two treatment arms to detect effects of reasonable size.

The targeted breakdown of the sample into Social Distancing treatment arms is as follows:
Target Sample: 2000
Control (40%): 800
SD1 (30%): 600
SD2 (30%): 600

4. **Interventions:**

Social Distancing Treatments:
- **SD1: Community Support for Social Distancing.** We will ask individuals whether they themselves support social distancing, and use this information to calculate the fraction of households in the community who support social distancing. Then, in a later phone call, we will ask individuals to guess the share of households in the community who support social distancing. Individuals who underestimate the true share of households in the community that support social

distancing will be given information on the true (higher) share of support for social distancing, and individuals correctly guessing the true share will be told that their guess is correct.
- **SD2: Community leader support for social distancing.** We will survey community leaders and ask them to endorse social distancing in their communities. In this treatment, we will inform households by phone call that their leaders support social distancing in their communities.

We also cross-randomize a family of knowledge treatments as a part of this study. They are described here but their analysis is pre-specified in another pre-analysis plan found here:
https://doi.org/10.1257/rct.5862-1.0

Knowledge Treatments:
- **K1: Knowledge Incentives.** We will randomly offer a subset of respondents 5 Mozambican meticais (MT) for every correct knowledge response on a subsequent phone survey. We will examine the effect of the treatment on future knowledge and behavior. If they answer all 40 questions correctly, respondents can earn a maximum of 200MT (approx. US$2.86).
- **K2: Tailored Feedback.** We will randomly give tailored feedback to a subset of respondents based on their response to COVID-19 knowledge questions, by informing them of a subset of their correct responses and correcting a subset of their incorrect responses. We will examine if tailored feedback improves relevant knowledge and behavior in a subsequent telephone survey.

5. **Primary Analysis of Social Distancing Treatments:**

Questions:
- Do people practice more social distancing when they are informed that others in the community support social distancing?
- Do people practice more social distancing when they are informed that leaders and other prominent individuals from their community support social distancing?

Primary Outcome:
The primary outcome will be an indicator for the respondent practicing social distancing. It will be constructed from two component indicators: the own report of practicing social distancing, and others' report of the respondent's practicing social distancing. The primary outcome will be equal to one if <u>both</u> the own report and others' report of practicing social distancing is equal to one, and zero otherwise.

The component indicators are as follows:
- **Own report of practicing social distancing:** We will ask the following questions of each survey respondent in Round 3.
    a) In the past 14 days, have you observed the government's recommendations on social distancing?
    b) The following eight social distancing questions, in which the response in parentheses is indicative of social distancing behavior:

	Social Distancing Actions: Is this something your household has been doing for the last seven days?
1	Shop in crowded areas like informal markets (No)
2	Gather with several friends (No)
3	Help the elderly avoid close contact with other people, including children (Yes)
4	If show symptoms of coronavirus, immediately inform my household and avoid people (Yes)
5	Drink alcohol in bars (No)

6	Wear a face mask if showing symptoms of coronavirus (Yes)
7	Instead of meeting in person, call on the phone or send text message (Yes)
8	Allow children to build immunity by playing with children from other households (No)

From these responses, we will construct an indicator for the respondent following social distancing recommendations, according to their own self report. The indicator will be equal to one if the answer to question (a) is "yes", and if the number of responses to (b) that are indicative of social distancing behavior (those responses in parentheses in the table above) is above the median number in the Round 3 study sample.[2] It will be equal to zero otherwise.

- **Others' report of respondent's practicing social distancing:** We ask all surveyed individuals (including community leaders) within the social network or geographic proximity of the respondent whether or not they have seen the respondent in the last 14 days. If they have seen the respondent in the last 14 days, we ask the following three follow-up questions:
   o Did he/she come closer than 1.5 meters to you or others not of his/her household at any point in the last 14 days?
   o Did he/she shake hands, try to shake hands, or touch you or others not of his/her household in the last 14 days?
   o In general, did he/she appear to be observing the government's recommendations on social distancing (avoid large gatherings and keep at least 1.5 meters distance from people not of his/her household)?

From these reports of others, we will construct an indicator for the respondent following social distancing recommendations, as reported by others. The indicator will be equal to one if:
   o No other surveyed person reports having seen the respondent in the past 14 days; OR
   o If one or more other surveyed person(s) did see the person in the past 14 days, all other surveyed person(s) responded "no", "no", and "yes" (respectively) to the three follow-up questions asking if the respondent was practicing social distancing; OR
   o No other surveyed person reports knowing the respondent.[3]

The indicator will be equal to zero otherwise.

Regression:

$$Y_{ij} = \beta_0 + \beta_1 SD1_{ij} + \beta_2 SD2_{ij} + \eta B_{ij} + \delta_i^{others} + \delta_i^{leaders} + \gamma_i + \epsilon_{ij}$$

where Y_{ij} is the primary outcome for household i in community j; SD are indicator variables representing treatment groups; B_{ij} is the baseline social distancing indicator (the baseline value of the dependent variable); γ_i are community fixed effects; and ε_{ij} is a mean-zero error term. We will use robust standard errors.

The regression will also control for the number of other survey respondents and community leaders who report knowing the survey respondent at baseline (in Round 2). Specifically, δ_i^{others} is a vector of dummy variables for the distinct number of other surveyed study respondents who report knowing

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[2] In the unlikely scenario where above the median number of "yes" responses only applies to less than 10% of the sample, this condition will be changed to above or equal to the median number of "yes" responses.
[3] Below we specify how we will separately control for the number of other survey respondents and community leaders who report knowing the survey respondent at baseline (in Round 2).

the household (0, 1, 2…, X-1, X or more; where X is the first integer where over 90% of the sample is represented by previous non-negative integers), and $\delta_i^{leaders}$ is a vector of dummy variables for the distinct number of community leaders who report knowing the household (0, 1, 2…, Y-1, Y; where Y is maximum number of leaders found within one of the 76 sample communities). Including this control variable helps reduce residual variance in the dependent variable, because respondents who are known by more others in the community will also have more reports of social interactions with others.

Hypothesis:
Treated households will be more likely to practice social distancing: coefficients β_1 and β_2 will be positive. We make no prediction regarding the relative magnitudes of the coefficients.

Multiple Hypothesis Testing:
In all cases where we adjust key values to control the false discovery rate, we will use the method of List, Shaikh and Xu (2019) using the user-written program mhtreg (Barsbai et al 2020) in Stata 15.

Two treatments are of primary interest: SD1) community support for social distancing; and SD2) community leader support for social distancing. Therefore, when we assess the primary hypothesis, we will apply multiple hypothesis test corrections to the coefficients β_1 and β_2.

Secondary Analyses:
We will analyze impacts of the social distancing treatments on the separate components of the social distancing index (the own report and the others' report separately). If substantive conclusions differ across the two, we will prioritize the others' report because that outcome is less prone to concerns about reporting bias and experimenter demand effects.

We will also pool SD1 and SD2 together, to examine the effect of some endorsement of social distancing (whether by other community members or by community leaders).

We will also run a regression with indicators for social distancing treatments, the cross-randomized knowledge treatments and their interaction terms.

REFERENCES

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