

A Brief Telecounselling Intervention During COVID-19 for Women in Rural Bangladesh*

Pre-Analysis Plan

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Abstract

In this document, we provide the research design and analysis plan for evaluating the impact of a brief telecounseling intervention that aims to improve the mental health and wellbeing of women in rural Bangladesh. Due to COVID-19 lockdown and movement restrictions, women in developing countries are potentially experiencing a heavier burden of household chores and unpaid care responsibilities, and an increase in domestic violence, which are likely to affect their mental health. We want to evaluate whether providing mental support to adult women improves (i) their own mental health, (ii) compliance with COVID-19 precautionary measures, (iii) physical health of self, children, and other household members, and (iv) their own happiness, life satisfaction, and aspiration for the future.

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1 Motivation

Countries around the world imposed lockdown and social distancing restrictions on people to contain the spread of the 2019 coronavirus disease (COVID-19). Of course, quarantine and social distancing would slow the virus from spreading but it might also result in a number of psychological problems among people including acute stress, anxiety, and emotional disturbances, which might have a lasting psychological impact such as post-traumatic stress disorder and depression (Brooks et al., 2020; Davillas & Jones, 2020). Moreover, millions experienced job and income loss due to disruptions in economic activities caused by COVID-19, which might negatively affect mental health of people further.

People in developing countries, particularly the poor, are affected the most due to the lack of job securities and social safety nets. Besides, such impacts are exacerbated for women in developing countries, who are either engaged in homemaking or are in work that pays markedly less. Because of COVID-19, women now face increased unpaid care workload, such as caring for children who are out of school and the elderly, as well as gender-based violence at home. These would only aggravate their mental health further if necessary steps are not taken at the earliest.

2 Background and Intervention

2.1 Bangladesh and COVID-19

The government of Bangladesh imposed economic lockdown on March 26, 2020, which was later relaxed on May 30, 2020. With the increasing number of new COVID-19 cases, people of Bangladesh remains in fear of contracting the virus.

2.2 The Telecounseling Program and the Research Design

The intervention consists of four brief mental-health counseling sessions over the phone (i.e., telecounseling) to 2,402 women distributed across 357 villages in Khulna and Satkhira districts in Bangladesh. One adult woman per household was enrolled for the program. Following enrolment, we randomly assigned them to either the telecounseling treatment arm or to the control arm, where no counseling is provided to women. Therefore, our randomization is at the household (or individual) level. We also tried to have both treatment and control households within each village, so that we can control for community characteristics while analysing the data. Since many parts of Bangladesh are still under lockdown, we believe that contamination would be unlikely. Besides, en-

rolled households are quite far away from one another, minimizing further possibilities of contamination.

Eventually, 1,299 women were assigned to the treatment and 1,103 women to the control arm. We would run four fortnightly (every two weeks) telecounseling sessions, each for 20 minutes, covering different aspects of the coronavirus’ impact on women’s physical and emotional wellbeing. The four modules to be covered are on: (i) awareness of COVID-19, symptoms and preventive measures to address the fear of infection; (ii) taking care of emotional wellbeing to cope with stress; (iii) taking care of physical health of self and child to address health-related anxiety; and, (iv) helping each other and staying connected to cope with social distancing. Sessions would be delivered by locally recruited, trained female para counsellors. Para counsellors would contact participants a week before every session to make an appointment that is convenient for participants; they then talk to participants during the nominated time.

2.3 Data

To conduct this randomized experiment, we collaborated with a local research-focused NGO called Global Development and Research Initiative (GDRI). GDRI surveyed rural households to understand health and wellbeing of women during the pandemic. This data was collected in between the end of May and mid-June. We would use this data as our baseline. The telecounseling treatment of women would begin in mid-July 2020.¹ The endline data would be collected in the end of September 2020.

Depending on the COVID-19 situation in Bangladesh, we also plan to follow the participants up six months after the endline. In that case, the second endline (or follow-up) data could be collected in the end of March 2021.

2.3.1 Surveys

The baseline survey (conducted by GDRI) focuses on demographics, income and employment status, household food security, change in household chores, knowledge and perceptions about COVID-19, compliance with COVID-19 precautionary measures, mental health and wellbeing (stress and physical health). At the endline, we would also collect information on women’s depression, happiness, life satisfaction, and aspirations.

¹Researchers of this study did not access the baseline data (collected by GDRI) at the time this document was finalized.

2.3.2 Outcomes

There are two primary outcomes and five secondary outcomes.

Primary Outcomes

Perceived Stress. Participants' perceived stress level would be measured using an adapted version of Perceived Stress Scale (PSS) (Cohen et al., 1997). The scale consists of 10-items that are answered on a 5-point scale (never (= 0), almost never (= 1), sometimes (= 2), fairly often (= 3), and very often (= 4)). Therefore, PSS score is between 0 and 40. The score cut offs are: low perceived stress = 0 – 13; moderate perceived stress = 14 – 26; and high perceived stress = 27 – 40. Using the PSS score, we would create a binary variable that would equal 1 if a respondent has moderate to high perceived stress and 0 if the perceived stress level is low. For robustness, we would assign 1 to items if the respondent's answer is either "Fairly Often" or "Very Often" and assign 0 otherwise, and then take the average of these 10 responses. Therefore, this variable would range from 0 to 1. For example, if a respondent answer "Fairly Often" or "Very Often" in 5 questions (so each would be assigned 1) and "Never", "Almost Never" or "Sometimes" in the remaining 5 questions (so each would be assigned 0), then the average of these responses would be 0.50. The PSS questions are as follows:

1. How often have you been upset because of something that happened unexpectedly?
2. How often have you felt that you were unable to control the important things in your life?
3. How often have you felt nervous and "stressed"?
4. How often have you felt confident about your ability to handle your personal problems? ^a
5. How often have you felt that things were going your way? ^a
6. How often have you found that you could not cope with all the things that you had to do?
7. How often have you been able to control irritations in your life? ^a
8. How often have you felt that you were on top of things? ^a
9. How often have you been angered because of things that were outside of your control?
10. How often have you felt difficulties were piling up so high that you could not overcome them?

where ^a requires reverse-scoring.

Depression. Depression level would be measured using the 10-item version of the Center for Epidemiologic Studies Depression Scale (CES-D-10) (Andresen et al., 1994). The scale consists of 10 items that are answered on a 4-point scale (rarely or none of the time (less than 1 day) (= 0), some or a little of the time (1-2 days) (= 1), occasionally or a moderate amount of time (3-4 days) (= 2), most of the time (5-7 days) (= 3)). Therefore, the CES-D-10 score is between 0 and 30, where a score greater than 10 means someone has depression. Using this cut-off, we would create a binary variable that would equal 1 if the CES-D-10 score is above 10 and 0 otherwise. For robustness, we would assign 1 to items if the respondent’s answer is either “occasionally or a moderate amount of time” or “most of the time” and assign 0 otherwise, and then take the average of these 10 responses. Therefore, this variable would range from 0 to 1, where a higher number would mean severe depression. The CES-D-10 questions are as follows:

In the last 7 days...

1. I was bothered by things that usually do not bother me.
2. I had trouble keeping my mind on what I was doing.
3. I felt depressed.
4. I felt like everything I did was an effort.
5. I felt hopeful about the future.^a
6. I felt fearful.
7. My sleep was restless.
8. I was happy.^a
9. I felt lonely.
10. I could not get “going”.

where ^a requires reverse-scoring.

Secondary Outcomes

Physical Health (of self, children, and adult household members). We ask 10-item questions on common illnesses (e.g., cold, cough, sore throat, body ache, breathing difficulty, etc.) of self, children, and adult household members, experienced in the last 15 days. These questions are answered as either “yes” or “no”. We would assign 1 to items if the respondent’s answer is “no” and assign 0 if “yes”, and then take the average of these 10 responses. Therefore, this variable would range from 0 to 1, where a higher number would mean better physical health. We would create three ‘physical health’ variables for the respondent, children, and adult household members.

For robustness, we would create three binary variables that would equal 1 if the average is more than 0.50 and 0 otherwise. We ask the following questions to measure physical health of self, children, and adult household members.

In the past 15 days did you or your family members have the following ailments?

1. Cold
2. Cough
3. Fever
4. Feeling chills
5. Headache
6. Body ache
7. Sore throat
8. Sneeze
9. Difficulty breathing
10. Congestion in the chest

Compliance with COVID-19 precautionary measures. Compliance is measured using 7-item questions that are answered on 5-point scales. We would assign 1 to items if the respondent’s answer is either of the maximum 2-points (“mostly” or “always”) and assign 0 otherwise. We would then take the average of these binary values. Therefore, this variable would range from 0 to 1, where a higher number would mean higher compliance. We ask the following compliance questions:

1. Apart from using toilet, I washed my hands with soap and water at least 5 times a day.
2. I often forget to wash my hands after returning home from outside.^a
3. In the last seven (7) days, how frequently did you go outside to buy grocery? ^a
4. In the last month, how frequently did you go outside for social visits (e.g., to see friends or neighbours, attending weddings or other occasions)?^a
5. I often forget to keep distance (at least 2-arms length) from other people when outside.^a
6. If I ever go outside of my house, I use face mask.
7. If I need to cough or sneeze, I cough or sneeze into my elbow.

where ^a requires reverse-scoring.

Happiness. We would measure happiness with the following question from the

World Values Survey: “Taking all things together, how happy are you these days?” The question measures happiness on a numerical 11-point scale, where 0 means “not happy at all” and 10 means “extremely happy”. We would then convert this scale into a binary variable that equals 1 if the score is between 6 and 10 (indicating happiness) and 0 otherwise. For robustness, we would create a continuous variable that would be the score divided by 10, so that the value of this new variable is between 0 and 1 (where a higher number means more happiness).

Life Satisfaction. We would measure life satisfaction with the following question from the World Values Survey: “How satisfied are you with your life as a whole these days?” The question measures life satisfaction on a numerical 11-point scale, where 0 means “completely dissatisfied” and 10 means “completely satisfied”. We would then convert this scale into a binary variable that equals 1 if the score is between 6 and 10 (indicating higher life satisfaction) and 0 otherwise. For robustness, we would create a continuous variable that would be the score divided by 10, so that the value of this new variable is between 0 and 1 (where a higher number means higher life satisfaction).

Future Aspirations. We would measure future aspirations with the following questions focusing on life, income, and overall hopefulness for the future: “How hopeful are you about returning to the way life was before?” (*Life*); “How hopeful are you about (you and/or your husband) earning the same as before?” (*Income*); “Considering everything, how hopeful are you about the future?” (*Overall*). These questions measure future aspirations on a numerical 11-point scale, where 0 means “not hopeful at all” and 10 means “extremely hopeful”. We would then convert these scales into three binary variables (for the three aspects) that equal 1 if the score is between 6 and 10 (indicating higher aspirations) and 0 otherwise. For robustness, we would create three continuous variables that would be the score divided by 10, so that the values of these new variables are between 0 and 1 (where a higher number means higher aspirations for the future).

2.4 Hypotheses

The intervention is hypothesized to:

1. Improve women’s mental health (perceived stress and depression).
2. Improve physical health of self, children, and other household members.
3. Increase compliance with COVID-19 precautionary measures.
4. Increase happiness, life satisfaction, and aspirations.

2.5 Multiple Hypotheses Testing

Since we test many hypotheses, we would correct p -values using the Westfall-Young (WY) adjustment (Westfall & Young, 1993). WY accounts for correlations across outcomes using bootstrap resampling (we would use 1,000 replications and then 5,000 for robustness).

3 Empirical Analyses

3.1 Outcomes

To test our hypotheses, we would estimate the following regression specification:

$$Y_i = \alpha + \beta T_i + \gamma Y_{0i} + X'\zeta + \nu + \epsilon_i \quad (1)$$

where Y_i is the outcome of individual i measured at the endline. T_i is an indicator for women who received the telecounseling treatment. Y_{0i} is the baseline analogue of the outcome.² X is a vector of controls that includes age, education, occupation, marital status, household income loss, food insecurity, number of household members, number of children under 5, relationship with head of the household, husband's occupation, and increase in household chores. We define these controls below. ν is village fixed effects (so our comparisons are between women in the same village). Since randomization is at the individual level, we would not cluster standard errors. However, for robustness, we would cluster standard errors at the village level and report these results in the appendix.

Control Variables

- Age (in years).
- Education (an indicator for illiteracy).
- Occupation (an indicator for being a home-maker).
- Marital status (an indicator for being married).
- Household income loss (an indicator for partial or complete income loss).
- Food security (8-item questions on food security. Assign 1 to items that are answered “yes” and 0 otherwise, and then take the average. Therefore, this variable would range from 0 to 1, where a higher number would mean higher food insecurity). We ask the following questions on food security:

²We measure depression, happiness, life satisfaction, and aspirations only at the endline. Thus, while estimating the impact on these outcomes, we would not control for their Y_{0i} .

Has the following happened in the last 2-3 weeks that...

1. You have been worried that there might not be enough food in the house to arrange three meals for everyone in a day?
 2. You or anyone in your family could not have nutritious food due to lack of money?
 3. There was lack of variety in food items due to lack of money?
 4. Someone in the family could not have a meal due to lack of money?
 5. You had three meals a day but the food was not sufficient?
 6. There was scarcity of food in your family
 7. You or anyone in your family were hungry but you could not buy food due to lack of money?
 8. Someone in your family was unfed for a day due to lack of money?
- Number of household members (1 if live alone).
 - Number of children under 5 (0 if no children).
 - Relationship with head of the household (an indicator for the respondent being the household head).
 - Husband's occupation (an indicator for husband being unemployed).
 - Increase in household chores (an indicator for an increase in household chores).

3.2 Heterogeneity Analysis

We would explore heterogeneity in terms of:

- Trusting and socializing with neighbors (at baseline): impact might vary with trust and socialization with neighbors. If impact is greater for those who trust and, thus, socialize with neighbors frequently then trust and socialization compliments the intervention. On this, we ask “Do you trust your neighbours or relatives to the extent you did before this crisis? (i) Trust everyone and socialise as usually, (ii) Trust most of them and socialise with them, (iii) Trust very few and socialise only with them, (iv) Do not trust anyone and do not socialise with anyone.” We would then create a binary variable that equals 1 if answered (i) or (ii) and 0 if answered otherwise.
- Perceptions about coronavirus (at baseline): the intervention might be more effective for those who hold accurate perceptions about the virus. We would create a perception index based on 16-item questions, answered as either “yes” or “no”. We would assign 1 to items that are answered “yes” and 0 otherwise, and then take the average. Therefore, this variable would range from 0 to 1, where a higher

number would mean having more accurate perception. On perceptions, we ask the following questions:

Could you please tell me whether these statements are accurate or wrong (answers are given in brackets).

1. Anyone regardless of age can be infected by the virus. [Accurate]
 2. Anyone infected with the virus will die. [Wrong]
 3. Coronavirus is contagious, it can spread from one person to other. [Accurate]
 4. If anyone in the neighbourhood/village gets infected with the virus, everyone will be infected. [Wrong]
 5. There is no vaccine for Coronavirus. [Accurate]
 6. If anyone in the neighbourhood/village dies from Coronavirus they cannot be buried in this neighbourhood/village. [Wrong]
 7. Staying home can protect from Coronavirus. [Accurate]
 8. If anyone in the neighbourhood/village gets infected, they needs to be ostracised. [Wrong]
 9. One gets infected with the Coronavirus because of their sins. [Wrong]
 10. This virus is a curse. [Wrong]
 11. Foreigners/people who come abroad spread the virus. [Wrong]
 12. I will not give anyone from my family into marriage in family that had anyone infected with Coronavirus. [Wrong]
 13. No one will give anyone from their family into marriage in my family if any of my family members were infected with Coronavirus. [Wrong]
 14. If I get infected with the virus, no one will ever hire me for work. [Wrong]
 15. This is a disease of the poor. [Wrong]
 16. This is a disease of the rich. [Wrong]
- Whether someone helps with household chores (at baseline): impact might vary depending on whether the respondent deals with household chores by herself or with the help of other household members. If impact is greater for those who receive help with household chores, then this help and the intervention are complimentary. On this, we ask “Who help you with household chores these days?” If either husband, daughter, son, other female members, or others help then we would code it as 1 and 0 otherwise.

To explore heterogeneity, we would estimate the following interaction model:

$$Y_i = \alpha + \beta_1 T_i + \beta_2 H_i + \beta_3 (T \times H)_i + \gamma Y_{0i} + X' \zeta + \nu + \epsilon_i \quad (2)$$

where H_i is alternatively (i) trusting and socializing with neighbors, (ii) perceptions about coronavirus, or (iii) whether someone helps with household chores, all measured at the baseline.

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