Addendum to the Pre-Analysis Plan for:
Mental Health, Productivity, and Child Investment in Bangalore

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Introduction

This addendum describes an extension of our mental health study in peri-urban areas near Bangalore, India. We will investigate how stigma, discrimination, and sick-role behavior contribute to the outcomes of respondents who received the study interventions. Our inquiry focuses on labor market and marriage market behaviors and outcomes.

Background

According to a preliminary analysis, the study interventions improved reduced the severity of depression and anxiety symptoms but also reduced labor market activities for study participants. Negative labor market effects were strongest for (i) the arm that received psychiatric treatment only, and (ii) respondents from households with marriage-eligible members.

Anecdotal evidence suggests that mental health stigma is pervasive and extreme in the study area. Stigma concerns may be particularly relevant for households that are active in the arranged marriage market. Self-isolation is a well-documented response to stigma that might influence labor market outcomes (e.g. Audet et al. 2013). Discrimination is also a primary concern for people with depression (Lasalvia et al. 2013). To understand these mechanisms better, we augmented our survey instrument and decided to conduct an additional follow-up survey.

Data

The survey instrument for this survey round is based on our earlier survey instrument but includes the following additional components:

1. General Self Efficacy Scale (Schwarzer and Jersualem 1995).
2. Rosenberg (1965) Self Esteem Scale
3. A modified version of the Self-Stigma of Mental Illness Scale (Corrigan et al. 2012).
4. Adherence to mental illness stereotypes
5. Perceived impacts of a depression diagnosis on labor and marriage market outcomes.
6. Additional questions for intervention recipients about possible stigmatization from receiving the intervention.
7. A module about possible emotional and physical abuse.
8. Marriage market outcomes for baseline-unmarried household members: marriage timing, spousal characteristics, and dowry information.
9. An elicitation of willingness to pay for mental health care.

10. Additional bargaining power items about how often the respondent eats alone.
11. Additional time diary items about whether the respondent was alone, with children, or with other adults during each diary entry.

This survey round also incorporates interviews with "other household members." We will try to survey one other individual from each participant household. This abridged survey instrument measures the following additional outcomes:

1. Labor market activities of the other household member.
2. Attitudes toward depression.
3. Adherence to depression stereotypes.
4. Perceived impacts of study participation (for households that received the interventions).
5. Questions about household characteristics and economic circumstances, as well as labor market activities of the study participant, to validate the self-reports of study participants.

This data collection is ongoing and will conclude in July 2019.

Research Questions and Identification

1. What are the perceptions towards depression and depressed people in this community? In particular:
    - Are people with depression stigmatized in this setting?
    - Are people with depression victims of violence?
    - How is depression related to social status and decision-making power within the household?
    - Does depression have implications in the marriage and labor markets throughout the household?
    - Do depressed people experience self-stigma?
    - Does depression lead to sick-role behavior?
2. Do the study intervention have impacts on these outcomes?

We will use two strategies to address these questions. First, we will describe perceptions toward depression and depressed individuals within the control group. The key identification assumptions in this case are that the control villages are representative of the whole sample and that our treatment, which is randomized by village, has no spillover effects in the control group. These assumptions are plausible because the interventions were randomized within geographic strata and the study sample only includes up to two people per village.

Secondly, we measure whether and how the study interventions affect the above outcomes. This analysis will follow the methodology outlined in our main pre-analysis plan. We will also explore suggestive evidence about the mechanisms that might generate these treatment effects.

a) Descriptive Analysis: we will investigate the (i) attitudes and beliefs about depression, (ii) status and decision-making power within the household, and (iii) perceptions of stigma and discrimination in the labor market and marriage market related to depression among study participants and other household members. Whenever possible, we will separately consider two subgroups: the relatives of the study participant and the study participants who self-identify as depressed. The former group provides the best available proxy for social norms. Conversely, we will use the latter group to describe the decision-making power, self stigma, and sick-role behavior of depressed people.
b) Treatment effects on labor and marriage markets. We will consider the following outcomes: time use (e.g, time alone, time at home, time spent working outside the home), labor participation, hours worked, and earnings (for participant and other household members), marriage of household members (e.g., whether and when any household member married since the study began, how costly was the search for a partner, proxied by geographic distance to spouse's household of origin, and spousal quality, proxied by caste, age, education. We will also investigate possible impacts on dowries.
c) Treatment effects on perception of stigma and discrimination, decision-making power, self stigma, and sick role behavior. We will consider all the outcomes listed in a). This third part of the analysis will provide suggestive evidence of possible mechanisms that caused effects on the labor and marriage markets. For example, if we find that the treatments largely reduce self-stigma but not discrimination, we can conjecture that one possible cause for negative impacts on the labor market may be discrimination.
d) Treatment Effect Heterogeneity: we will repeat the analysis in c) splitting the sample by marriage market eligibility of its members. We will look at age and marital status of all household members to determine who is marriageable. This analysis will show if any discriminatory or self-isolating behavior is exacerbated in households with marriageable members, thus studying whether there is a link between marriage and labor market discriminatory behaviors.

References:

Audet, C.M., McGowan, C.C., Wallston, K.A. and Kipp, A.M., 2013. Relationship between HIV stigma and self-isolation among people living with HIV in Tennessee. *PloS one*, *8*(8), p.e69564.

Corrigan, P.W., Michaels, P.J., Vega, E., Gause, M., Watson, A.C. and Rüsch, N., 2012. Self-stigma of mental illness scale—short form: reliability and validity. *Psychiatry research*, *199*(1), pp.65-69.

Lasalvia, A., Zoppei, S., Van Bortel, T., Bonetto, C., Cristofalo, D., Wahlbeck, K., Bacle, S.V., Van Audenhove, C., Van Weeghel, J., Reneses, B. and Germanavicius, A., 2013. Global pattern of experienced and anticipated discrimination reported by people with major depressive disorder: a cross-sectional survey. *The Lancet*, *381*(9860), pp.55-62.

Rosenberg, M., 1965. Rosenberg self-esteem scale (SES). *Society and the adolescent self-image*.

Schwarzer, R. and Jerusalem, M., 1995. Generalized self-efficacy scale. *Measures in health psychology: A user's portfolio. Causal and control beliefs*, *1*(1), pp.35-37.