



IMPACT OF COMMUNITY-BASED DEPRESSION TREATMENT: EVIDENCE FROM INDIA

Research Brief
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OVERVIEW

Globally, depression affects an estimated 3.8 percent of the population.¹ It is the fourth largest contributor to the global burden of disease and the third largest source of years lost to disability.² Estimates from the National Mental Health Survey 2015-16 suggest that nearly 15 per cent of adults in India need active intervention for one or more mental health issues and one in 20 Indians suffers from depression. Symptoms of depression include disrupted sleep and nutrition which may lower productivity, reduce the willingness or ability to invest in child human capital and affect participation in household decisions. These conditions have adverse implications for the socioeconomic outcomes of the household. Moreover, depression is more prevalent among the poor and can contribute to poverty traps.

Depression treatment may have health benefits and improve socioeconomic outcomes. For developing countries, it is particularly important to understand the economic impact of depression and find effective and scalable treatments. Despite a high need for treatment,

the supply of mental health care in low-income countries is constrained by several barriers such as lack of resources, scarcity of trained healthcare providers, infrastructure for mental health services and social stigma around mental health disorders.

Pharmacotherapy may be a useful tool to treat depression in developing countries and clinical studies have demonstrated its effectiveness in other countries. However, there is a lack of evidence on the feasibility and effectiveness of community-based provision of pharmacotherapy in developing countries, and its long-term effects. Moreover, little is known about how mental healthcare affects outcomes such as time-use, earnings, and investment, and the pathways through which these effects may occur.

This brief summarises findings from a study that examined the effects of pharmacotherapy on depression, socioeconomic outcomes, and possible pathways that may link mental health and economic behaviour, conducted in peri-urban Bangalore, India.³

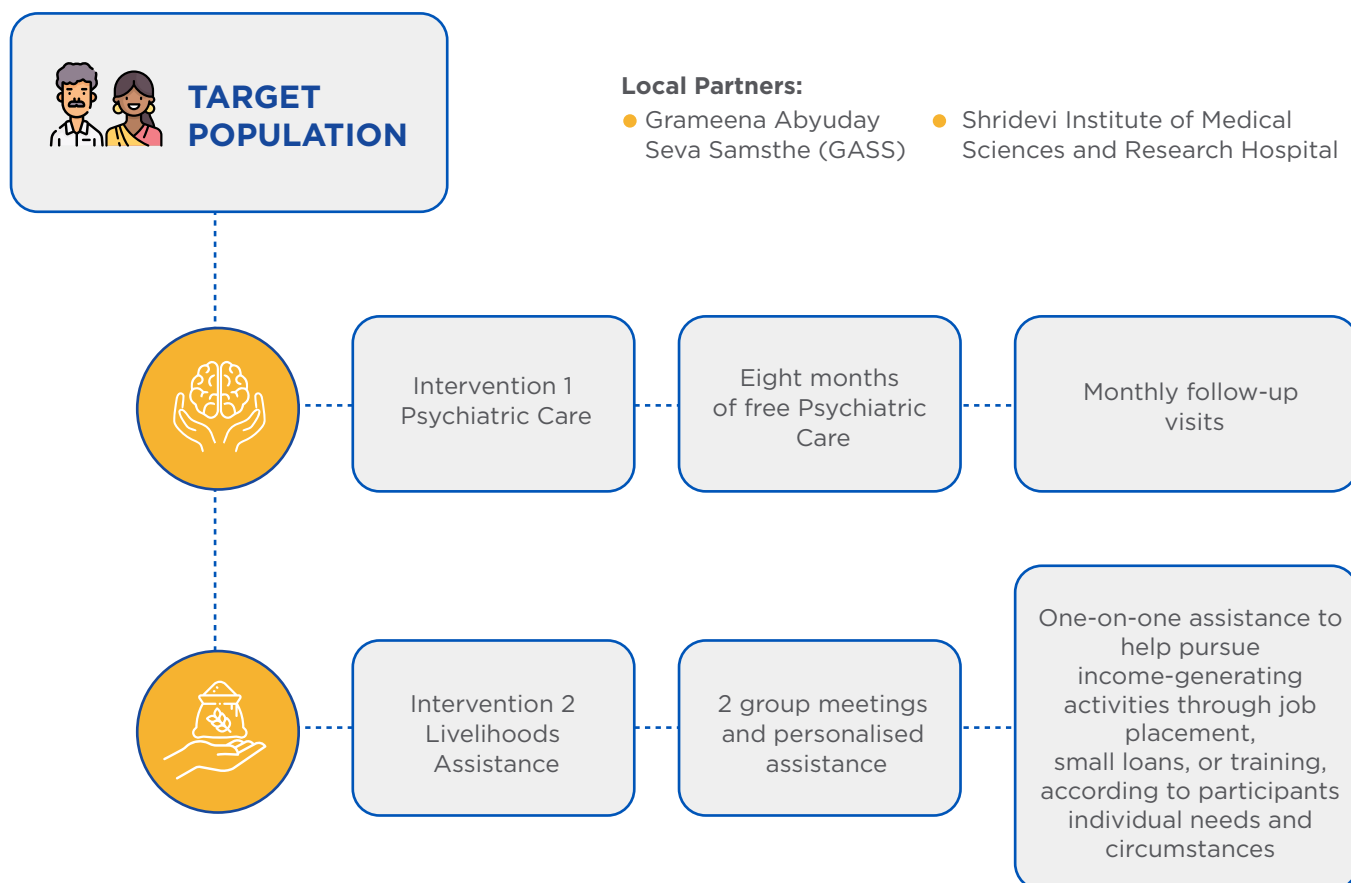
- ¹ Institute of Health Metrics and Evaluation. Global Health Data Exchange (GHDx). <http://ghdx.healthdata.org/gbd-results-tool?params=gbd-api-2019-permalink/d780dffbe8a381b25e1416884959e88b> (Accessed 1 May 2021).
- ² James, Spencer L, Degu Abate, Kalkidan Hassen Abate, Solomon M Abay, Cristiana Abbafati, Nooshin Abbasi, Hedayat Abbastabar, Foad Abd-Allah, Jemal Abdela, Ahmed Abdelalim et al., "Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017," *The Lancet*, 2018, 392 (10159), 1789–1858.
- ³ This research study was led by Manuela Angelucci (Department of Economics, University of Texas at Austin) and Daniel Bennett (Center for Economic and Social Research and Department of Economics, University of Southern California), and was conducted in collaboration with LEAD at Krea University (formerly IFMR LEAD). We gratefully acknowledge the generous support from the Swiss Programme for Research on Global Issues for Development (SNF r4d Grant 400640_160374, PI: Prof. Jürgen Maurer), the Jameel Poverty Action Lab Urban Services Initiative and the University of Michigan. This study received approval from multiple IRBs in India and the United States. The Institutional Ethical Committee of the Shridevi Institute of Medical Sciences and Research Hospital in Tumkur, Karnataka provided primary oversight of the PC intervention. We also received IRB approval for the full study, including the interventions and data collection, from the University of Chicago, the University of Michigan, the University of Southern California, the University of Texas at Austin, and the Institute for Financial Management and Research (IFMR), which led the data collection.

STUDY DESIGN

Researchers implemented a community-based cluster cross-randomised trial offering Psychiatric Care and Livelihoods Assistance to 1000 adults with symptoms of mild or moderate depression in a peri-urban region near Bangalore, India. The study area comprised 506 villages and wards (urban jurisdictions) with at least 40 households within the catchment area of our partner NGO in the Doddaballapur, Korategere, and Gauribidanur districts. 86 per cent of the participants were female.

Both interventions were delivered using the existing local infrastructure: a local NGO that offers these programs to people with mental illness. We measured impacts on the mental health, time use, and earnings of participants, human capital investment in children, and consumption, durable goods ownership, and hygiene/sanitation of households, as well as several potential pathways that could link depression to these outcomes.

Figure 1 Intervention Design



Recruitment was initiated in December 2016. A PHQ-9 depression severity scale (Kroenke et al. 2001) was used to screen participants for depression severity. Subjects with PHQ-9 scores of 9-20 (mild to moderately depressed) were recruited for the study.

Figure 2 Study Timeline

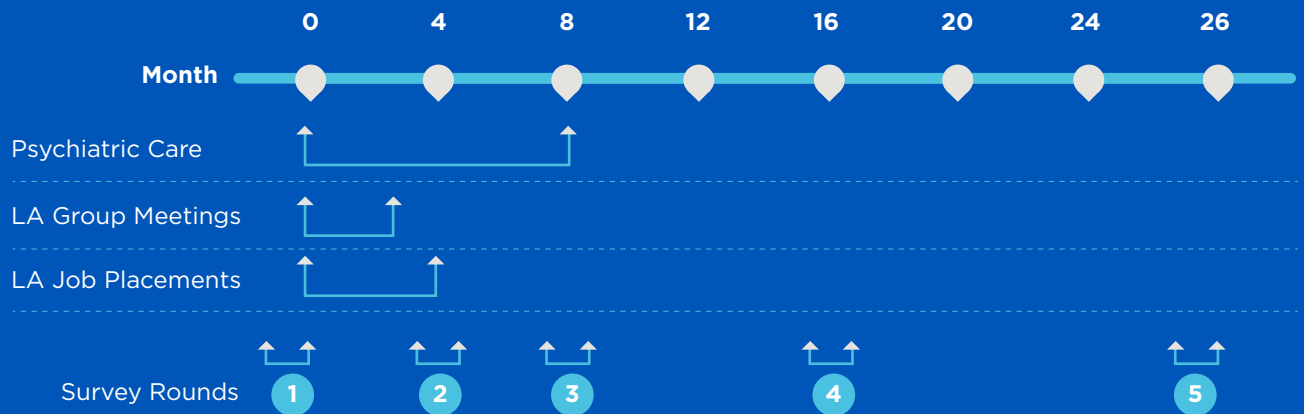
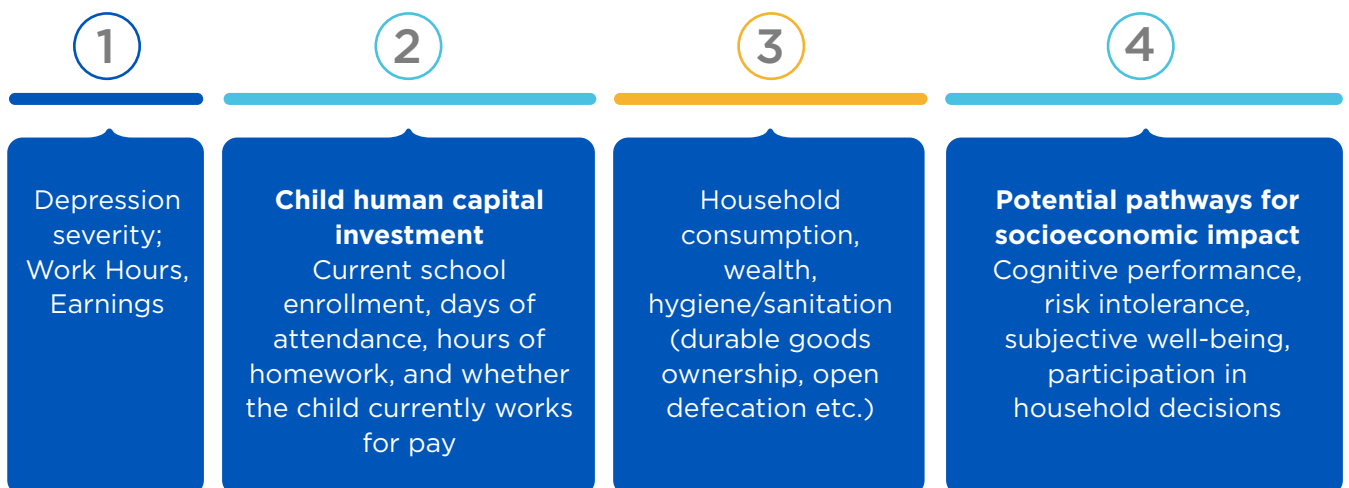


Figure 3 Outcomes of Interest



KEY FINDINGS

IMPACTS ON PARTICIPANTS

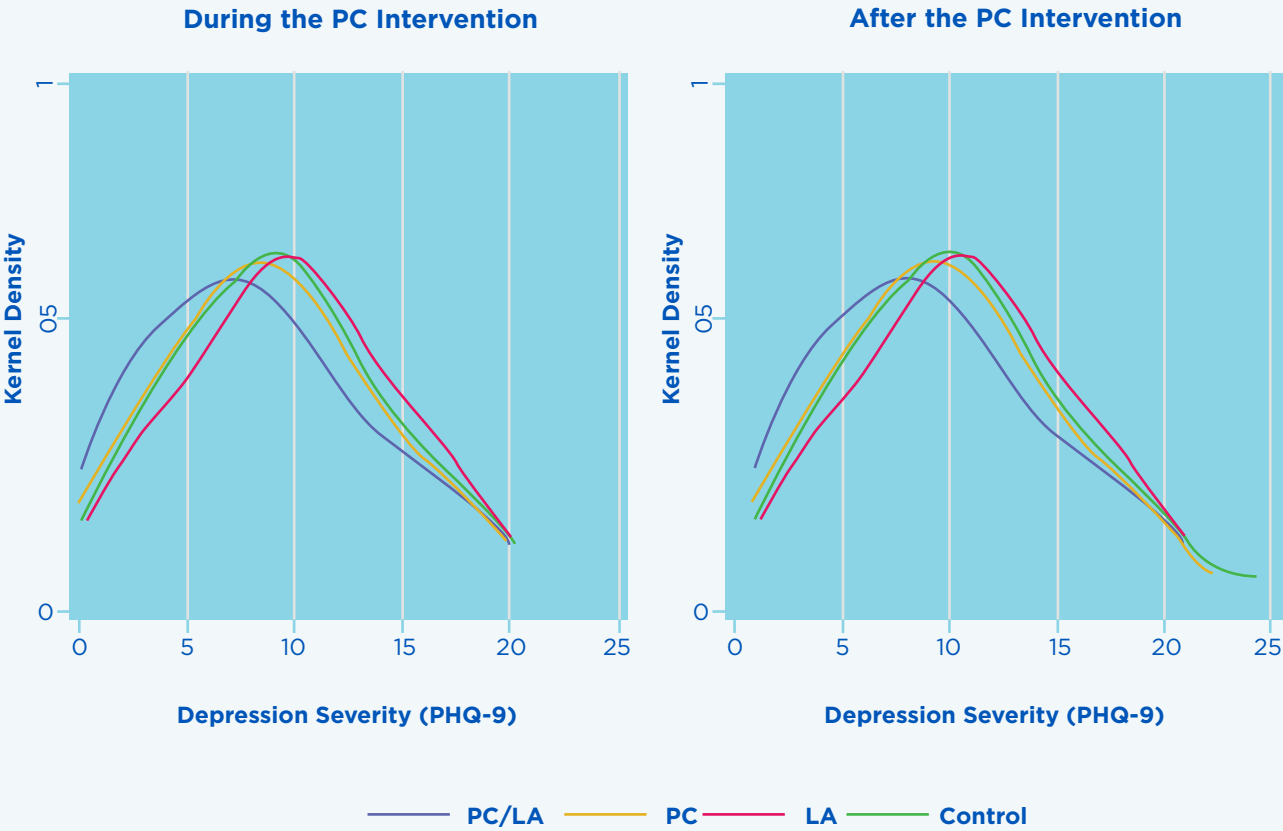
● Depression Symptoms

Both pharmacotherapy arms improve mental health outcomes for participants to an extent. However, the impact of the combined pharmacotherapy and livelihoods assistance (PC/LA) interventions is significantly larger and more durable. Both interventions reduce the frequency of mild and moderate depression, but the combined intervention has a more

long-lasting impact. Moreover, it is more effective for participants that had experienced childhood shocks. The PC/LA intervention significantly reduces anxiety while other interventions did not have statistically significant effects. This suggests that pharmacology may reduce work time by increasing the utility of leisure or self-care activities.

Figure 4

Depression Severity During and After the Psychiatric Care Intervention



- **Work Time and Earnings**

No intervention led to increases in work time and earnings; pharmacotherapy caused a small, temporary decrease in work time, but not when paired with livelihoods assistance.



Image Credit: McKay Savage from London, UK, Wikimedia.org



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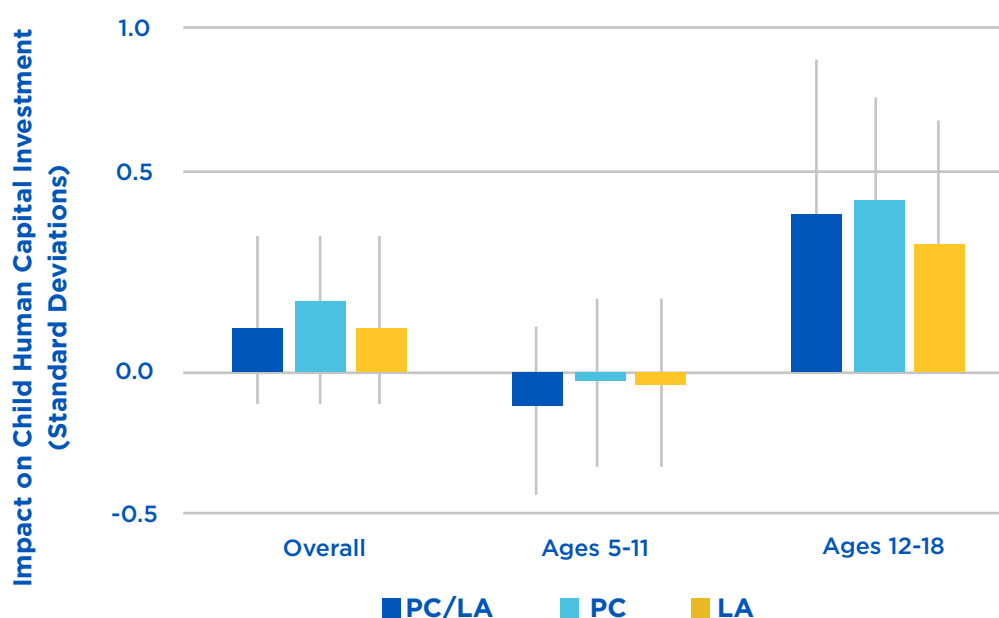
IMPACTS ON CHILDREN AND THE HOUSEHOLD

The interventions increase human capital investment for children who are 12 or older (the age of transition to secondary school). These results are driven by increases in enrollment and declines in labour force participation. The finding contributes to the literature that studies effective interventions to promote children's education by identifying an additional demand-side barrier to human capital accumulation.

The pharmacotherapy interventions and the combined interventions reduce the incidence of

negative shocks. These findings suggest that depression not only suppresses human capital investment, but also exposes people to additional shocks. On the other hand, the study finds that the interventions reduce subjective wellbeing, despite observed improvements in participants' mental health. This pattern suggests that the interventions may change aspirations or reference points, which is consistent with findings from a study by Adhvaryu et al. (2020) - the study found that objective improvements in circumstances that fall short of expectations reduce life satisfaction.

Figure 5 Impact on Child Human Capital Investment



● Discussion

The study finds that while providing treatment to adults suffering from depression increases investment in child human capital (as reflected by enrollment, attendance, homework time, and whether the child works for pay), it also has some negative impacts, most of which are transitory. Pairing livelihoods assistance with pharmacotherapy increases the size and duration of the mental health benefit, preserves the positive effect on child human capital investment, and safeguards people against several of these negative effects. In terms of cost-effectiveness, adding livelihoods assistance increases intervention costs by only five per cent.

Future research can examine the complementarity between pharmacotherapy and livelihoods assistance and the potential for other cost-effective light-touch interventions to enhance the benefits of mental health care. Since LA does not directly increase work time or earnings, features other than job-related benefits of LA may impact mental health. The group and individual social interactions that occur under LA may have enabled participants to receive emotional support from like-minded peers. Higher medication adherence among the PC/LA participants also suggests that LA may have improved the ability of participants to plan or follow through. Moreover, LA may have helped participants overcome the stigma of receiving

mental health care by supplying a “reason” for participating without admitting to mental illness.

The finding that treating adult depression increases child human capital investment suggests that adult mental health may be an important demand-side constraint on child human capital accumulation. The study also shows that depression treatment may change preferences by increasing risk intolerance, consistent with an increase in the marginal utility of consumption.

There is an urgent need to identify effective and scalable ways to provide mental health care in India. Findings from the evaluation suggest that there are two potential pathways through which depression may contribute to poverty across generations: adult depression may reduce investment in child education; and make people more risk tolerant, exposing them to additional shocks that make it more difficult to escape poverty. However, this suggests that community-based pharmacotherapy is feasible using local resources and may be a cost-effective way to treat depression in the community. Moreover, pairing pharmacotherapy with livelihoods assistance or other light-touch programmes may amplify the benefit of mental health treatments.





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