

Accelerating Indian Women's Use of Mobile Phones through Low-Cost Training in Digital Skills Improves Their Mental Health

In India, a wide gender disparity in access to mobile phones and the internet reinforces women's social isolation and may contribute to women's higher levels of depression than men. Offering Indian women brief, small-group, digital literacy classes is a cost-effective means of narrowing the gender gap in mobile technology use, yielding significant benefits for women's mental health as well as their willingness to embrace more liberal views about mobile phone use.



Research in India by the Inclusion Economics network shows that offering women brief, small-group, digital literacy classes amplifies their mobile phone use and has large returns two years later.

Findings



Women exposed to these classes report lower depression and anxiety. A possible channel is increased interaction with relatives and friends.



They also embrace more liberal beliefs about appropriate mobile phone and internet use for women.





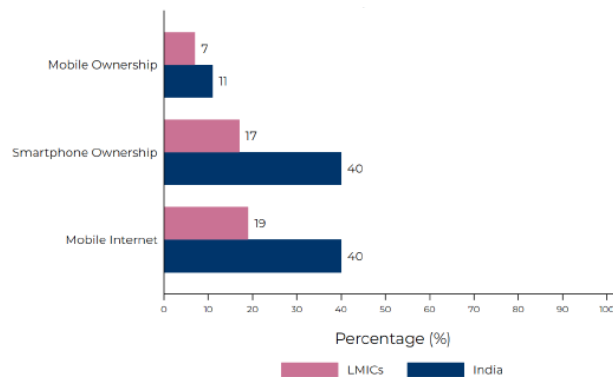
BACKGROUND

In LMICs, where people access the internet primarily with mobile phones, mobile phone use advances financial inclusion, education, employment, and physical and mental health. Yet as Figure 1 shows, gaps in mobile phone use and ownership persist. In gender-unequal countries like India, where women are 40% less likely than men to own a mobile phone or use mobile internet, prevailing gender norms that view mobile technologies as a threat to women's traditional roles contribute to the mobile gender gap.

Recognizing the many benefits of mobile phone and internet access, governments and NGOs in India and other LMICs have established programs to distribute free mobile phones or provide more affordable phone financing. However, even programs that focus on distributing mobile phones to women overlook the underlying normative gender constraints and limited digital skills that may impede women's use of mobile technology.

To more effectively address the mobile gender gap in India, the Inclusion Economics network is designing and implementing interventions that build on existing Indian government mobile phone distribution programs while taking into account the gender-specific social constraints and knowledge gaps that may restrict women's use of mobile technology. In 2018, the Government of Chhattisgarh distributed free smartphones to over 2 million rural women, along with 1GB of free data for the first 6 months, and ensured that all program villages had LTE coverage. Seeking to understand how to amplify the benefits of such programs, the Inclusion Economics network conducted a randomized controlled trial (RCT) with 3,816 Chhattisgarhi households already benefiting from the smartphone distribution program. The RCT examined the effect on women's mobile phone usage of offering brief, interactive digital technology classes to small groups of women, who together learned skills compatible with traditional gender norms. Women in the study also received take-home handouts with simple visual instructions for common mobile phone tasks suited to women's daily lives.

Figure 1: Mobile Gender Gap Across LMICs and India



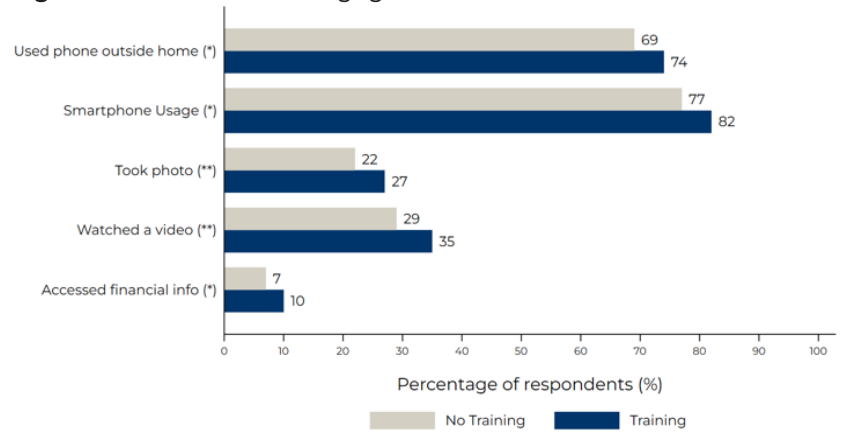
Notes: Source: GSMA Mobile Gender Gap Report 2023. A mobile owner is defined as a person who has sole or main use of a SIM card (or a mobile phone that does not require a SIM) and uses it at least once a month. Mobile internet use is defined as having used the internet on a mobile phone at least once in the last three months. Mobile internet users do not have to personally own a mobile phone.

Findings

DIGITAL LITERACY TRAINING INCREASED WOMEN'S USE OF SMARTPHONES BY ALMOST 5 PERCENTAGE POINTS, EVEN TWO YEARS AFTER THE CLASS.

In the 45-minute digital literacy classes conducted by the Inclusion Economics network, small groups of women who had received free smartphones from the Government of Chhattisgarh learned to complete specific mobile phone tasks compatible with gender norms, such as taking a photo, making and receiving calls, and performing a Google voice search. More than two years after the classes, the percentage of women who used a smartphone in the last month increased from 77.5% to 82.3%. These women engaged more frequently and deeply with their mobile phones, using them more often and for a wider range of tasks than those who received a smartphone but no training.

Figure 2: Female Phone Engagement

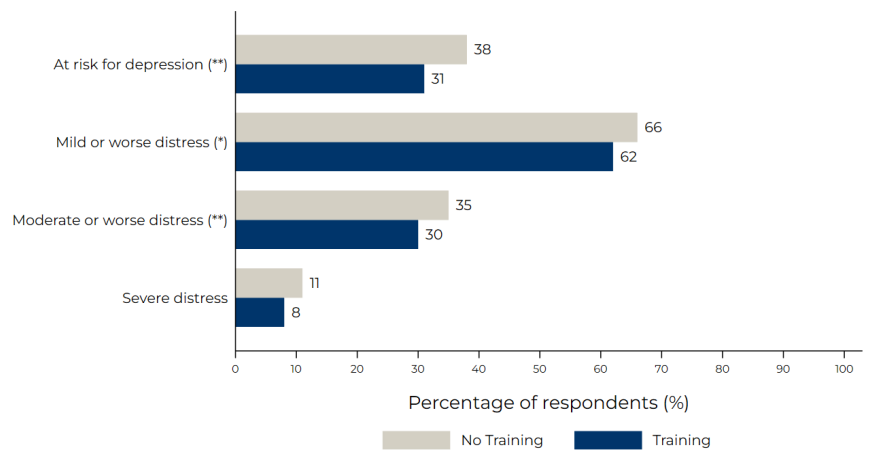


Notes: Statistical significance: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$. Women were asked if they used phone outside their home or used phone for any of the above purposes one month before the endline survey. Results reported for 3503 women in 212 villages (517 women in control villages and 2986 women in treatment villages).

THE TRAINING IMPROVED MENTAL HEALTH OUTCOMES.

Indian women are more likely than Indian men to suffer from depression and anxiety disorders, a disparity that may be linked to women's high levels of social isolation.¹ Although recent research has shown negative mental health impacts of mobile phones in wealthier countries, nascent research links mobile phones to positive mental health outcomes in LMICs.² Consistent with this literature, participants in the digital skills classes disclosed fewer feelings of depression and anxiety in their responses to an ultra-brief mental health screening survey than did non-participants. Using the Four Item Patient Health Questionnaire, researchers found that training decreased the percentage of women at risk for depression from 38% to 31.5% and the percentage of women experiencing moderate or worse psychological distress from 35% to 30%.

Figure 3: Female Mental Health Outcomes



Notes: Statistical significance: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$. The topmost category compares the percentage of respondents that are at risk of depression in the treatment (training) and control (no training) groups. The next three categories compare the share of treatment (training) and control (no training) group that report various levels of distress.

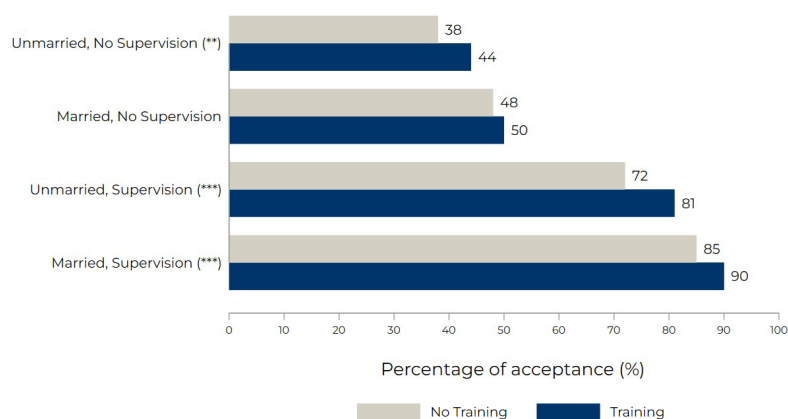
1 See "The burden of mental disorders across the states of India," *The Lancet* 7.2 (February 2020), pp. 148-161; Andrew et al., (2020), "Mothers' Social Networks and Socioeconomic Gradients of Isolation"; Amy Novotney, "The Risks of Social Isolation," *Monitor on Psychology* 50.5 (May 2019), p. 32.

2 A recent study of a nationally representative set of low-income adults in Ghana during the COVID-19 pandemic found that those who received mobile calling credits experienced a 9.8 percentage point decrease in mental distress. See Belinda Archibong and Francis Annan, "Using information and communication technology to improve mental health in Africa," Brookings Institution blog, May 16, 2023.

DIGITAL LITERACY TRAINING ALSO LIBERALIZED BELIEFS ABOUT APPROPRIATE INTERNET USE FOR WOMEN.

Women who participated in the digital skills class were more likely to approve of women's use of mobile phones despite prevailing social norms that see this technology as a potential threat to women's traditional role in the home. While the training did not significantly impact social acceptance of mobile phone use by married women without supervision, it did significantly increase social acceptance of unsupervised mobile phone use from 38% to 44% for unmarried women. Likewise, social acceptance of mobile use by women under supervision increased from 85% to 90% for married women and from 72% to 81% for unmarried women.

Figure 4: Acceptability of Female Phone Use



Statistical significance: * p ≤ 0.10, ** p ≤ 0.05, *** p ≤ 0.01. The bar graph compares the share of treatment (training) and control (no training) group that think it is appropriate for married/unmarried women to use phone with/without supervision. This figure captures woman's own beliefs (first order beliefs) on norms surrounding female phone use.

Policy Insights

Given the many social and economic benefits of mobile phones for people in LMICs, policymakers are already establishing programs to increase mobile access among disadvantaged communities, either by distributing free mobile phones or offering accessible financing options. While a number of these programs have targeted women, who in many LMICs have lower rates of mobile ownership and use, they have not addressed some of the key underlying socioeconomic factors that may contribute to this mobile gender gap. Recent research by the Inclusion Economics network shows that packaging these programs with brief, small-group digital literacy classes can amplify the positive effects of mobile phones at low additional cost. Teaching women how and why to use mobile phones not only accelerates their use of this technology but also improves mental health outcomes and liberalizes their views of socially acceptable mobile phone use.

Our costs for implementation were low, and could be even lower at scale.*

Our Training



913 INR

Per person cost of design and delivery

Adaptation for Scale



50,000 INR

Cost of adapting materials



31 INR

Per person cost of delivery

*The cost from our version to the scalable version reduces significantly as the participant selection, training invitation, and training delivery model change. For a scale where a minimum of 50 villages are covered with each village having around 150 people to be trained, it costs 32 INR. The scaled version invites participants for training using a community announcement system in place of personally inviting targeted individuals. It deploys a community-trainer model that entails training a community leader, frontline worker, or SHG member who would then go back to their villages and take up the training for their village. This model considers leveraging existing govt training infrastructure to conduct the first level of training (i.e. training of the community trainers). Further, it replaces the heavier costs of expert trainers' salaries, travel and related management costs with incentives for the community trainer for every additional person trained.