International Initiative for Impact Evaluation

Learning brief

Water, sanitation and waste management

Using behavioural science to support latrine use in rural India

Findings from behaviour change interventions in Odisha

Ending open defecation for good

The Swachh Bharat Mission (SBM) successfully addressed India's open-defecation problem by supporting the construction of household latrines. However, in Odisha, people with access to latrines do not always use them. Research suggests this could be due to incomplete latrine construction, misinformation on how to use latrines, limited availability of water and preference for open defecation.[1] These trends were consistent with survey results from Karnataka and Bihar.[2]

In 2016, the International Initiative for Impact Evaluation (3ie) launched the Promoting Latrine Use in Rural India Evidence Programme to understand if behavioural-science-informed interventions can improve latrine use. The programme commissioned interventions that use *behaviour change approaches* to encourage latrine use, as well as evaluations of these interventions, in Odisha, Gujarat, Bihar and Karnataka. On average, *these behaviour change interventions resulted in small but significant increases in self-reported latrine use.*

Highlights

- The behaviour change intervention in Odisha increased self-reported latrine use by 6 percentage points more than what was seen by the Swachh Bharat Mission (SBM) alone.
- Behaviour change interventions may help health officials continue to promote latrine use in hard-to-reach communities.

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Designing interventions for local behaviour change

The interventions supported by 3ie targeted the *behaviour* of latrine use. In contrast to interventions that expand access to a good or service, behaviour change interventions try to influence people's habits and attitudes (Table 1).

3ie's four behaviour change interventions were uniquely designed to address the reasons why people with latrines choose not to use them in each state. To understand the effectiveness of the behaviour change approach in increasing latrine use, researchers measured latrine use in villages that participated in the intervention to those that did not – both before and after the intervention.

This allowed them to compare the increase in latrine use in control villages (which was due to SBM) with the increase in intervention villages. Any increase in the latter, beyond what was seen in the former, is an impact of the intervention. Researchers investigated changes in *self-reported latrine use* and *the observed state of household latrines.*

Table 1: A comparison of behaviour change and non-behaviour change interventions

Behaviour change intervention example	Non-behaviour change intervention example
A group of community leaders commissions a series of colourful murals of the SBM image to remind people to use toilets. 	BPL families are given green ration cards to collect food grains from shops.
At a community meeting, participants view videos of neighbours who regularly use latrines discussing why they prefer them.	District health officials build sewage treatment plans for rural areas.

The intervention in Odisha

The Rural Welfare Institute and Emory University worked closely with Puri district health officials to design a behaviour change intervention for participating villages. First, the team asked programme participants to identify reasons why people do or do not use latrines.

Next, the team identified behaviour change techniques to address these reasons. Finally, partners combined these approaches to develop the *Sundara Grama* (beautiful village) intervention (Table 2). The community activities implemented through the intervention involved folk-art performances, transect walks, mothers' meetings and a village map painting. To support these community activities, the team met with households to discuss what they had learned and to repair broken latrines.

Table 2: Reasons for not using a latrine and how they were addressed in Odisha

Reason against latrine use (given by community)	Behaviour change technique used	Intervention activity to address reasons for non-use
Misinformation on how to use latrines	Provide participants with practical knowledge on how to use latrines	At a community meeting, a *palla* (traditional folk-art performance) performed by local troupes communicated information on the benefits of latrine use, safe pit emptying practices and safe disposal of child faeces.
Preference for open defecation	Show participants the frequency of open defecation, generate a sense of disgust	Community mobilisers conducted a transect walk where participants were instructed to mark piles of faeces with brightly coloured *holi* powder. Afterwards, participants discussed their reactions to the walk.
Latrines not functional	Inform participants about latrine maintenance and repairs	During household visit, latrines were repaired by a local contracting partner.

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Behaviour change interventions improve self-reported latrine use

After all intervention activities were implemented, the research team evaluated the impact of the intervention on self-reported latrine use.

In intervention villages, self-reported latrine use increased by about 20 percentage points; in control villages, it increased by 14 percentage points. This 6 percentage point difference suggests that behaviour change interventions moderately improved self-reported latrine use beyond the SBM effort (Table 3). There was no significant change in the observed state of household latrines.

Despite immense cultural and socio-economic differences, findings from the study in Odisha were consistent with results in Gujarat and Karnataka. The four behaviour change interventions, when considered collectively, moderately improved self-reported latrine use (Figure 1). This finding suggests that behaviour change interventions have the potential to effectively increase latrine use across India. However, in Bihar, there was no significant change. Participants in Bihar explained that they felt latrines were unhygienic and inconvenient.[3]

Figure 1: The intervention's effects on self-reported latrine use (larger values show increases in use)

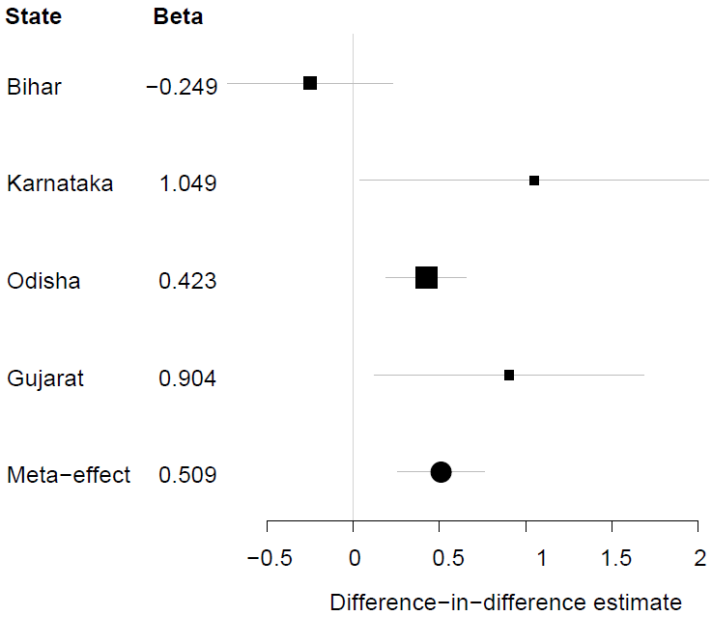

Table 3: How the intervention changed self-reported latrine use

Intervention village change in self-reported latrine use	Control village change in self-reported latrine use	Impact of behaviour change intervention
20%	14%	6%

Keeping Odisha open-defecation free

We show that behavioural-science-informed interventions can increase self-reported latrine use, even if they do not change the observed state of household latrines. Building on the SBM's monumental success, behavioural change interventions have the potential to sustain gains in latrine use, especially in the context of the COVID-19 global health crisis. Health messaging about the spread of COVID-19 through the use of shared spaces may discourage public latrine use.[4] Behaviour change interventions are low-cost, helpful tools that may be used to counteract this expected decline. While the results of the evaluation are suggestive, behaviour change interventions can be valuable for maintaining open-defecation-free villages and eradicating open defecation once and for all.

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About this learning summary

This brief summarises findings from four cluster-randomised trials that assess the impact of behaviour change interventions on latrine use in in Odisha, Gujarat, Bihar and Karnataka. The four trials were conducted by Oxford Policy Management, Swiss Federal Institute of Aquatic Science and Technology (EWAG), Emory University, and the London School of Hygiene & Tropical Medicine, and implemented by the Rural Welfare Institute, the Indian Institute of Public Health, Gandhinagar (IIPHG), Water Aid India and World Vision India.

The Promoting Latrine Use in Rural India Evidence Programme is administered by 3ie and funded by the Bill & Melinda Gates Foundation. For more information, please visit https://www.3ieimpact.org/our-work/water-sanitation-and-hygiene/promoting-latrine-use-rural-india-evidence-programme.

This brief was authored by Jane Hammaker and Charlotte Lane. They are solely responsible for all content, errors and omissions. It was designed and produced by Akarsh Gupta and Anushruti Ganguly.

Endnotes

[1] Caruso, BA, Sclar, GD, Routray, P, Nagel, C, Majorin, F, Sola, S, Koehne, W, DeShay, R, Udaipuria, S and Williams, R, 2019. Impact of a multi-level intervention, Sundara Grama, on latrine use and safe disposal of child faeces in rural Odisha, India. New Delhi: International Initiative for Impact Evaluation (3ie).
[2] Unpublished results.
[3] Unpublished report.
[4] Lane, C, Khatua, S and Caruso, B, 2020. The use of behavioural-science informed interventions to promote latrine use in rural India: a synthesis of findings.