International Initiative for Impact Evaluation

Learning brief

Water, sanitation and waste management

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Using behavioural science to support latrine use in rural India

Findings from behaviour change interventions in Gujarat

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 Gujarat, 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 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 whether 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 Gujarat, Odisha, 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 Gujarat increased self-reported latrine use by nearly 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 compared latrine use in villages that participated in the intervention to latrine use in villages 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 Gujarat

The Coastal Salinity Prevention Cell, Upward Spiral and London School of Hygiene & Tropical Medicine worked closely with Bhavnagar 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 *5 Star Toilet Campaign* intervention (Table 2). The community activities implemented through the intervention involved skits to promote toilet use, songs, models of 5-star toilets, short instructional films on using pits, a toilet vision board, a compost guessing game and a life-size pit-filling demonstration. The team used a two-day 'fair' format to implement activities.

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

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	After viewing a life-size toilet pit standee, people were asked to guess the time it takes for a pit to fill and were provided with instructions on how to empty them.
Preference for open defecation	Create social norms that promote latrine use	A song was composed for the campaign that communicated the core message of the intervention: *the world is getting smarter, people are getting smarter, therefore, use a toilet.*
Latrines not constructed	Encourage household to invest resources in latrine aesthetics	A virtual reality experience was set up so that people could experience what it feels like to enter a clean toilet with light, ventilation, and painted or tiled walls.

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 15 percentage points; in control villages, it increased by 9 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 Gujarat were consistent with results in Odisha 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)

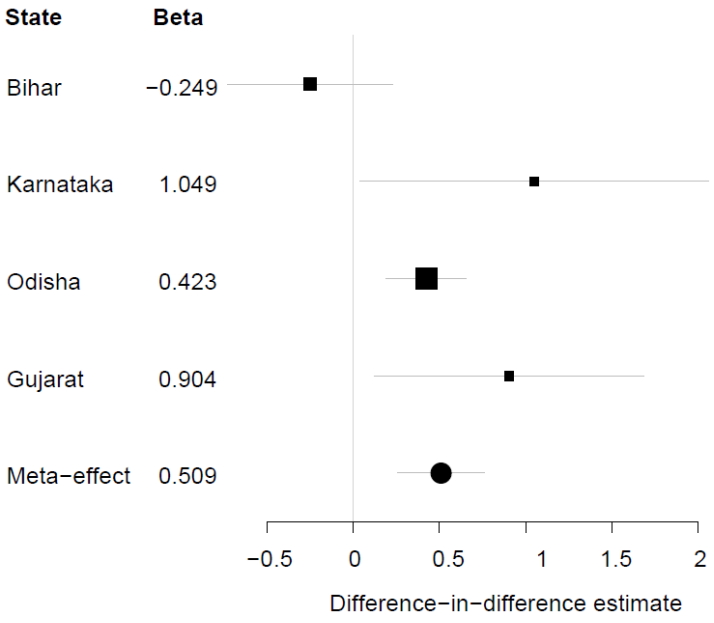

Table 3: How the intervention changed self-reported latrine use

Intervention village self-reported latrine use	Control village change in self-reported latrine use	Impact of behaviour change intervention
15%	9%	6%

Keeping Gujarat 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] Schmidt, W-P, Chauhan, K, Bhavsar, P, Yasobant, S, Patwardhan, V, Aunger, R, Mavalankar, D, Saxena, D and Curtis, V, 2020. Cluster-randomised trial to test the effect of a behaviour change intervention on toilet use in rural India: results and methodological considerations. *BMC Public Health* 20(1), pp.1–16.
[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.

The International Initiative for Impact Evaluation (3ie) is an international grant-making NGO promoting evidence-informed development policies and programmes. We are the global leader in funding, producing and synthesising high-quality evidence of what works, for whom, how, why and at what cost. We believe that using better and policy-relevant evidence helps to make development more effective and improve people's lives.

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