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Using behavioural science to support latrine use in rural India

Findings from behaviour change interventions in Bihar

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 Bihar, 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 inconvenience associated with their use. These trends are consistent with survey results from Karnataka and Odisha.¹

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 the practice, 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

- Behaviour change interventions in Odisha, Karnataka and Gujarat increased self-reported latrine use by approximately 6 percentage points more than the Swachh Bharat Mission (SBM) alone; however, the intervention did not change self-reported latrine use in Bihar.
- 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 seek 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
<p>A group of community leaders commissions a series of colourful murals of the SBM image to remind people to use toilets.</p> 	<p>BPL families are given green ration cards to collect food grains from shops.</p>
<p>At a community meeting, participants view videos of neighbours who regularly use latrines discussing why they prefer them.</p>	<p>District health officials build sewage treatment plans for rural areas.</p>

The intervention in Bihar

World Vision India and Oxford Policy Management worked closely with Nalanda district health officials to design a behaviour change intervention for participating villages in Bihar. 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 Improving HABIT intervention (Table 2). Community activities implemented through the intervention involved community

meetings with card games, latrine use demonstrations, and knowledge-sharing activities. Community meetings were supported by household meetings with similar activities. The intervention was implemented over a six-month period.

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

Reason against latrine use (given by community)	Behaviour change technique used	Intervention activity to address reasons for non-use
Misinformation on how quickly latrines fill	Provide participants with practical knowledge on how latrines work	At a community meeting, a facilitator used a bucket filled with holes to demonstrate how faecal matter in the pit loses volume during decomposition.
Latrines perceived as inconvenient to use and empty	Provide participants with practical knowledge on how latrines work	A card game demonstrated the filling rate for standard pits with varying family sizes.
Preference for open defecation	Create social norms that promote latrine use	During household visits, participants signed a poster pledging to use latrines.



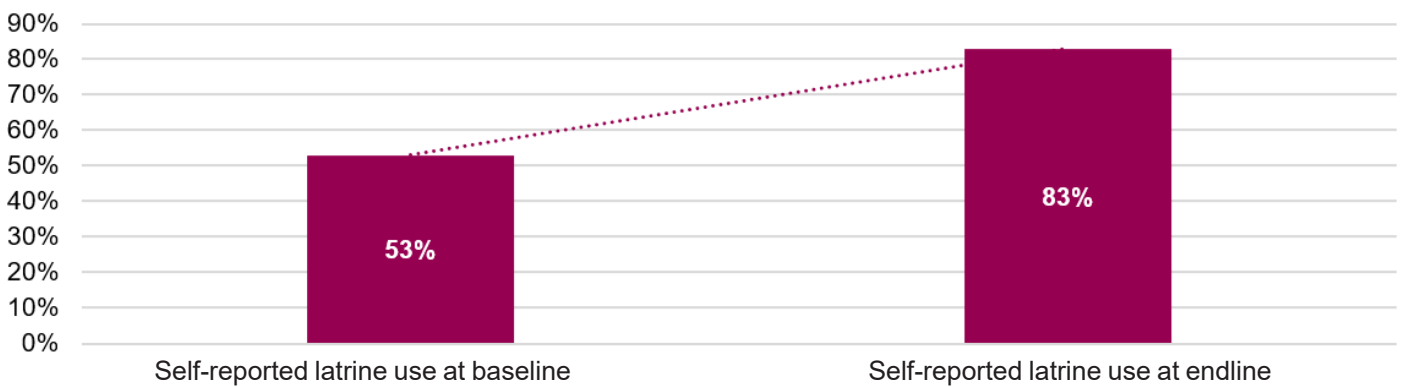
Increases in self-reported latrine use were seen in treatment and control sites

After all intervention activities were implemented, the research team evaluated the change in self-reported latrine use in treatment and control villages. Among households with functional toilets, the team found that self-reported

latrine usage increased by nearly 30 percentage points in both treatment and control villages (Figure 1). While participants in both treatment and control villages

reported using their latrines more often, there was no significant difference in usage for villages that participated in the behaviour change intervention compared to villages that did not participate.

Figure 1: Self-reported latrine use in Bihar



However, findings from studies in Odisha, Gujarat and Karnataka do suggest that behaviour change interventions can increase self-reported latrine use in

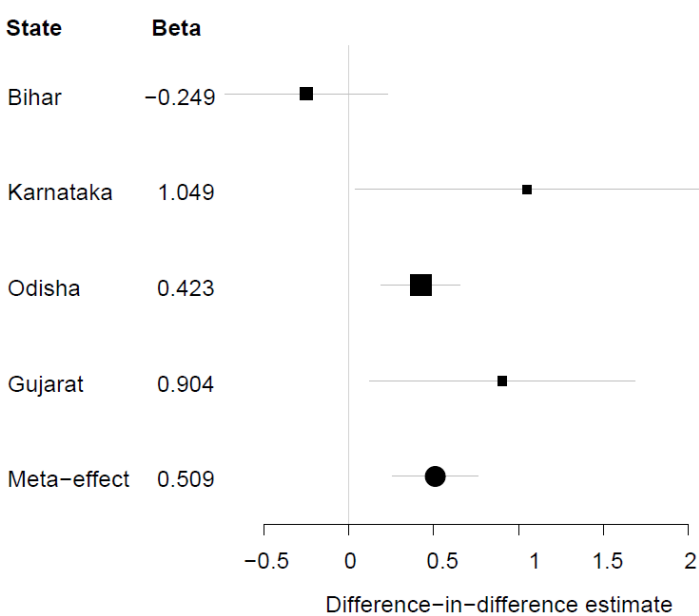
treatment villages by about 6 percentage points on average (Table 3). The four interventions, when considered collectively, moderately improved self-

reported latrine use (Figure 2). This suggests that behaviour change interventions have the potential to effectively increase latrine use across India.

Table 3: How the intervention changed self-reported latrine use in Gujarat, Odisha and Karnataka

Intervention village: self-reported latrine use	Control village: change in self-reported latrine use	Impact of behaviour change intervention
18%	13%	6%

Figure 2: The intervention’s effects on self-reported latrine use (larger values show increases in use)



Keeping Bihar open-defecation free

The behavioural-science-informed interventions that we supported increased self-reported latrine use in many states, though not in Bihar. It is unclear whether this was because the specific activities implemented in Bihar were ineffective or that the context was more challenging. There continues to be a caste-based avoidance of pit emptying and embarrassment about public posting of latrine-related materials. Sometimes pits were emptied before

faecal matter had decomposed, drastically diminishing the expected health benefits of latrine use.

On average, these interventions increased self-reported latrine use, even if they did not change the observed state of household latrines. Therefore, 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.² 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 Unpublished results; 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 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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