International Initiative for Impact Evaluation

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Does building more toilets stop the spread of disease? Impact evidence from India

Over one-third of the 2.5 billion people worldwide who do not have access to improved sanitation live in India. Nearly 69 per cent of the population practise open defecation. A study published in the *The Lancet* in 2012 reports that about 212,000 children under the age of five die from diarrhoea every year in India. Typically, the government of India's national sanitation schemes have focused on building more latrines for reducing open defecation, health-related illness and child malnutrition.

What they evaluated

A 3ie-funded impact evaluation research team used a cluster-randomised controlled trial to evaluate the government's Total Sanitation Campaign in Odisha, India to see if latrine coverage did indeed reduce exposure to disease. The intervention mobilised households in villages characterised by high levels of open defecation to build and use latrines. The study was conducted between May 2010 and December 2013, involving more than 50,000 individuals in 100 villages.

Did it work?

The study results show that the assumption that more latrines will reduce exposure to faecal pathogens, and therefore disease, does not necessarily hold true.

During the study period, latrine coverage in the intervention villages increased from 9 per cent of households to 63 per cent, compared to an increase from 8 per cent to 12 per cent in the control villages. The increase in latrine coverage did not prevent diarrhoea or reduce soil-transmitted helminth infection in the intervention villages. The seven-day prevalence of reported diarrhoea in children younger than 5 years was 8.8 percent in the intervention group and 9.1 percent in the control group.

What next: Lessons for future research and practice

The findings from the study raise questions about the health effects of sanitation programmes that are focused solely on increasing the number of latrines. The number of latrines may not be the best primary metric for showing progress towards sanitation targets. Also, the drive to build latrines does not address behaviour change regarding open defecation, safe disposal of faeces or handwashing before handling food. Several households with toilets continue to practise open defecation. The study did not analyse the costs associated with the programme.

Clasen, T, Boisson, S, Routray, P, Torondel, B, Bell, M, Cumming, O, Ensink, J, Freeman, M, Jenkins, M, Odagiri, M, Ray,S, Sinha, A, Suar, M, Schmidt, W, 2015. *Effectiveness of a rural sanitation programme on diarrhoea, soil-transmitted helminth infection, and child malnutrition in Odisha, India: a cluster-randomised trial* 3ie impact evaluation report 38 (forthcoming), New Delhi: International Initiative for Impact Evaluation (3ie).

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