

Can behaviour change approaches improve the cleanliness and functionality of shared toilets?

Improved sanitation is not just about building shiny new toilets - it is critical to maintain existing infrastructure. This Practice Note details a research project in Dhaka looking at behaviour change strategies to help users keep their toilets clean and functional.



Community meeting to share behaviour change messages

Why focus on shared toilets, and why Dhaka?

Most of Dhaka's low-income residents live in densely populated slum communities, where they depend on one of the city's enormous number of shared compound toilets: a recent study by the International Centre for Diarrhoeal Disease Research Bangladesh (ICDDR,B) estimated 4.3 million people in Dhaka use such facilities. However, it is notoriously difficult to keep shared toilets clean and well-maintained, leading to an unhygienic and unpleasant user experience, and often to under-use or eventual abandonment. This Randomised Control Trial (RCT) study - led by Stanford University, Johns Hopkins University and ICDDR,B - aimed to identify replicable and cost-effective strategies to promote better user-maintenance of these facilities.

What behaviours did the research target?

A formative research phase was conducted to identify which behaviours the study could usefully target, comprising stakeholder workshops, community focus groups and interviews. A number of sanitation-related issues were identified, including open defecation (mainly by children) and smoking in toilets. However, two issues were identified as presenting the most significant barriers to toilet cleanliness and functionality in the Dhaka context:

Target behaviour change 1: Don't throw paper in the toilet!

A common and problematic behaviour is the disposal of solid waste (such as plastic bottles, rags and paper) in toilets. The formative research phase confirmed this habit is widespread in Dhaka and has damaging effects on the long term sustainability of the facilities: the solid waste blocks outflow from the toilet and impedes the faecal sludge emptying process.

Target behaviour change 2: Always take water with you!

Flushing after use is complicated in Dhaka by varying water availability, with many slum areas suffering severe water shortages. As the formative research progressed, it became clear that water shortage was the single biggest barrier to toilet cleanliness in the target areas. In response, the intervention encouraged users to take two containers with them to the toilet to ensure an appropriate amount of water was used: one small bucket for pouring water in the toilet (ie, 'flushing'), and a *bodna* (plastic tea pot) for anal cleansing after defecation.

How were these messages delivered and reinforced?

The behaviour change strategy was developed through an iterative piloting and revision process. Fifty community health promoters were hired by the Dhaka NGO Dustha Shastho Kandro (DSK) - responsible for rolling out the intervention package under WSUP management - who disseminated messages on toilet use and cleanliness through compound meetings and door-to-door visits. Hardware was provided to support the intervention, including a plastic waste bin, a 4-litre flushing bucket for each cubicle, and a 70-litre plastic water storage bucket for compounds that faced water scarcity. As a vital component of the strategy, simple signage was developed and placed on and inside cubicles.

Evaluation findings

How was behaviour change measured?

The behaviour change campaign was rolled out under an RCT design incorporating 1,226 toilets across 23 low-income communities. Toilets were divided into 38 clusters, each assigned to the intervention or the control arm. The sampling unit was a shared toilet in a compound used by two or more households. All toilet users were interviewed in baseline and endline surveys. Before and after roll-out of the behaviour change campaign, all toilets were inspected for structural integrity, water supply, distance to water source and presence of visible waste (faeces, urine, dirt or solid waste) either inside or leading to the toilet.

Results

The RCT showed that the intervention significantly improved toilet maintenance. While in some cases behaviour improvements were seen in the control group, DID analysis indicates significant effects for a number of variables. Relative to the control group, toilets in the intervention group were **a)** more likely to have access to cleaning materials inside cubicles, **b)** more likely to have water for flushing, **c)** less likely to have a cubicle with visible faeces and **d)** less likely to have an unpleasant smell. Residents' hands were cleaner in the intervention group. Most compounds were actively using the materials provided during the intervention: waste bins were still in place in 64% of toilets at endline survey.

Table 1. Summarised results of the RCT.

Indicator	Intervention			Control			Difference-in-difference (DID)
	Baseline (N=907)	Endline (N=912)	Difference	Baseline (N=876)	Endline (N=883)	Difference	
	n (%)	n (%)		n (%)	n (%)	(%)	
Visible faeces:							
Inside pan	281 (32%)	83 (9.1%)	-22	212 (23%)	124 (14%)	-9	-13
Outside pan	68 (7.5%)	21 (2.3%)	-5.2	64 (7.3%)	31 (3.5%)	-3.9	-1.4
On path leading to toilet	34 (5.6%)	32 (5.3%)	-0.3	47 (7.7%)	35 (5.8%)	-1.9	1.6
Inside hole of pan	433 (48%)	297 (33%)	-15	399 (46%)	351 (40%)	-6.7	-8.5
Functional toilet cubicle	906 (99%) (N=919)	877 (98%) (N=892)	-1.2	916 (98%) (N=935)	877 (96%) (N=909)	-1.9	0.5
Visible inside toilet cubicle:							
Spit on walls/doors	199 (22%)	153 (17%)	-5.2	257 (29%)	187 (21%)	-7.9	2.8
Cigarette butts	95 (10%)	50 (5.8%)	-5	112 (13%)	73 (8.7%)	-4.5	-0.5
Household waste	91 (10%)	36 (3.9%)	-6	43 (4.9%)	26 (2.9%)	-2	-4
Rags/sanitary pad	43 (4.7%)	12 (1.4%)	-3.4	47 (5.6%)	23 (2.6%)	-2.8	-0.6
Smell of:							
Stool	521 (57%)	319 (35%)	-23	504 (58%)	382 (44%)	-15	-7.6
Urine	463 (51%)	264 (29%)	-22	516 (59%)	333 (38%)	-22	-0.01
Cigarette	83 (9.2%)	54 (5.9%)	-3	111 (13%)	65 (7.4%)	-5.5	2.2
Waste bin inside cubicle	6 (0.7%)	590 (65%)	64	3 (0.3%)	13 (1.5%)	1.1	63

This table does not show confidence intervals associated with each estimate. Bold values are statistically significant at the 5% level. Full results are presented in the study report available on the WSUP website.

Conclusions

These findings indicate that communal sanitation interventions can be improved by simple behaviour change approaches designed to help users to keep their toilets clean. Such approaches should be based on extensive community consultation to ensure strong understanding of local issues and needs. WSUP is excited by the potential of signage (coupled with community sensitisation) as a low-cost behaviour change tool, and is exploring if similar strategies can be used in other WSUP locations.

Limitations

This study looked at a single context (Dhaka): while many of the lessons are generalisable to other contexts, some specific learnings (eg, that smoking in toilets is a problem for users) should not be generalised. The study focused on how to influence user behaviour, but recognised that full resolution of Dhaka's sanitation issues requires changes in the attitudes and practices of other key stakeholders, notably non-resident landlords and local administrations. Many of the sanitation issues seen in these communities (including lack of water for toilet flushing, inadequate solid waste management and absence of effective desludging services) can only be fully resolved by policy attention coupled with landlord and public investment.

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