

Communal Toilets in Urban Poverty Pockets

Use and user satisfaction associated with seven communal toilet facilities in Bhopal, India

Introduction

During November 2008 an exploratory study was carried out in seven poverty pockets in Bhopal, India. It looked at patterns of use of communal latrine facilities in areas where household sanitation options are limited and open defecation is still practised. Poverty pockets were selected so as to include three different models of communal latrine management (municipal, Sulabh pay-to-use and community managed pay-to-use) and to cover settlements of different size. Data were collected by enumerators from a local NGO, the Advocacy of Alternative Resources, Action, Mobilization and Brotherhood (AARAMBH) to determine use and user satisfaction.

This summary is based on the final report of a study produced by Adam Biran (London School of Hygiene and Tropical Medicine and Marion Jenkins (UC Davis).

Background

Indian cities are experiencing rapid population growth and an expansion of urban poor living in slum areas. For a number of reasons including insecurity of tenure, lack of space and affordability, household sanitation options are limited. Thus coverage is poor and open defecation



Users outside an urban community-run sanitation block with disabled access

remains a problem. The provision of public, pay-per-use and community-owned sanitation blocks may offer an effective means to address this situation. Public toilets when sited in busy areas with high transient populations, have a limited contribution to improving domestic sanitation and attempts to use the income they generate to subsidise provision in slum areas seems to have been unsuccessful. However, much has been

invested in building public and communal toilets in slums with non-transient populations as a way of improving sanitation access. More resources are likely to continue to support this form of sanitation in dense urban areas in India¹.

Community and public sanitation could play an important role in achieving millennium development goals though evidence on coverage patterns, use and maintenance until now has been largely anecdotal. Therefore this study aims to gather and discuss evidence needed to quantify the potential contribution of communal toilets to reducing open defecation and faecal pollution in slum environments. In addition it will identify those design features and management factors that encourage the highest usage rates by all household members. Particular attention also will be given to the possibility of age and gender related differences in patterns of use.

Communal and community sanitation in Bhopal

Estimates of access to household sanitation in Bhopal poverty pockets vary but are generally low. Excluding the recently constructed community sanitation facility at Police Lines, there are 73 communal sanitation facilities in poverty pockets in Bhopal of which only 13 are maintained and not overcrowded. These 13 were all pay-to-use facilities of which there are a total of 28 in Bhopal poverty pockets (excluding Police lines)².

The Police Lines facility was constructed by WaterAid and their local NGO partner Advocacy of Alternative Resources, Action, Mobilization and Brotherhood (AARAMBH). It is managed by a community group formed from the users in the poverty pocket. A monthly fee entitles households to use the facility. Revenues are used for operation and maintenance of the facility

including payment for cleaners and a caretaker. The facility has separate male and female toilets and a child-friendly facility as well as provision for bathing and handwashing. At the time of the study the Police Lines facility was in a much better physical condition than the other facilities included in the study, although it was suffering from a shortage of water for cleaning and bathing.

With the exception of the Police Lines facility, communal latrines are either owned and run by the NGO Sulabh International on the basis of payment for use or are owned and run by the municipality. The municipality does not charge a user fee however, at some municipal latrines users pay a fee to a local resident who provides basic a cleaning service.

Methodology

Exit interviews were conducted at communal latrine facilities to collect data on the economic status and demographics of facility users, their purpose for using the latrine, whether the facility was the usual household latrine facility and user satisfaction with the condition of the facility. Household interviews were conducted in order to cover a sample of non-users as well as users from the poverty pocket in which each latrine was situated. Visual inspections of latrines were used to collect data on the size and physical conditions of latrine facilities. Tallies of users were kept for one day at each facility.

Estimating Distance from houses to latrine facilities

GPS readings were taken at the latrine facility and at each household that took part in the household survey to give approximate straight line distances between the houses and the nearest latrine facility.

Sampling

Selection of facilities was made from a list of all poverty pockets in Bhopal that have communal toilet facilities. Facilities were selected to include:

¹ The non-governmental organisation (NGO) Sulabh International has been responsible for building and operating more than 6,000 community toilet complexes with toilets and bathing facilities. These provide 24 hour access on a low-charge, pay-per-use basis.

² UN-HABITAT (2006) Poverty mapping: A situation analysis of poverty pockets in Bhopal

- three different management models (Sulabh pay-to-use, community managed pay-to-use and municipal free-to-use); and
- different poverty pocket sizes (200-300 households, 500-600 households and 1000-1500 households).

At each facility four enumerators (two male and two female) from AARAMBH conducted exit interviews. They approached users exiting the facility and asking if they were willing to participate in the survey, until the end of the data collection period or until a quota of 100 short and 50 long interviews had been conducted with respondents of each gender. Latrine users had to be over the age of 12 years for eligibility.

A minimum of 50 households in each poverty pocket were selected by walking a minimum of two transects and visiting every fourth house. In order to avoid restricting the sample to houses on the main thoroughfares enumerators tossed a coin on reaching a side alley in order to decide whether or not to sample houses along the side alley.

Results

Sample size

In total 854 men and 838 women were interviewed on exiting latrine facilities. A total of 1062 short exit interviews, 632 long exit interviews and 352 household

interviews were carried out. See Table 1 for details of facilities surveyed.

Number and gender of communal facility users

A tally of the number and gender of latrine facility users at each facility over the course of one day between 05.00 and 21.00 showed that approximately 33% are male, up to 18% are female and 51% of users are children. This figure is in keeping with demographic data from the household survey that suggested 57% of the population of the poverty pockets comprises of school aged children. All facilities show a striking gender difference in use with male use of latrines being more than double female use. The household survey however, found no difference in the proportions of male and female respondents who reported using the communal facilities for defecation.

Physical conditions and operating characteristics of facilities

Facilities surveyed and owned by municipalities (2) have operated between 10-16 years, are open 24 hours but at best were cleaned but crowded. Sulabh facilities have been operating between 4 -12 years, are open 05.00 to 22.00 on average and although well maintained by the NGO, were often crowded. The Police Lines facility is relatively new (<2 years), is maintained by the community, and open 05.00 to 23.00, and was considered clean and not crowded.

Table 1. Number of interviews at each facility

Facility	Management	Short exit interviews		Long exit interviews		Total exit interviews	Household interviews
		male	female	male	female		
3.10	Municipal	4	8	13	22	3.10	Municipal
3.20	Municipal	130	69	24	75	3.20	Municipal
4.20	Sulabh	118	82	46	55	4.20	Sulabh
4.30	Sulabh	55	47	26	62	4.30	Sulabh
Police Line	Community managed	102	107	66	41	Police Line	Community managed
4.10	Sulabh	84	56	45	56	4.10	Sulabh
4.40	Sulabh	106	93	35	65	4.40	Sulabh
Totals		599	462	255	376	Totals	

Social and Economic characteristics of communal latrine users

The majority of users (64% of men and 72% of women) were aged between 16 and 40 years – for reasons unclear³, male users tended to be slightly older than female users. Unskilled labour was the most common employment of facility users. Heads of households of latrine facility users were mostly unskilled labourers. Ninety percent of users were from households with a ration card. Sixty eight percent of latrine facility users were below poverty line⁴. Almost all (99%) were able bodied and 84% owned their own houses.

Economic Status of latrine owning households

There were some socio-economic differences between latrine owning households and households with no latrine. Latrine owning households were less likely to hold a ration card and the heads of these households were more likely to be skilled or salaried workers.

Patterns of use reported by communal latrine users

The latrine facilities were mostly used by locals who had to use it as their main household sanitation. For 97% of users the facility was reported as their usual place for defecation, at least once per day. Only 3% had brought a child to defecate. There were no gender differences in reported purpose for visiting the latrine facilities.

Distance and travel to communal latrines

Ninety six percent of users estimated they live within 500 metres of the facility they use and 99% had come to the facility on foot. The travel time for 94% of users was less than ten minutes.

³ It may reflect demographic patterns in the poverty pockets as younger women move in to join their slightly older husbands.

⁴ They held a blue ration card i.e. judged to be below poverty line.

Payment

Almost all users interviewed at exit (95%) pay a household subscription fee (usually monthly) to use the facility⁵. Of the remainder, 1% were guests, 2% paid per use and 2% were exempt from payment. The mean monthly fee reported was 29 INR. The monthly fee at Police Lines is nearly double (51 INR) the mean price⁶. Monthly fees across facilities represent a maximum of 2.5% of the maximum income of households below the poverty line. Eighty five percent of users believed that the fee was 'about right' while 14% believed that it was too high and 1% that it was too low. Satisfaction with the fee varies between facilities rather than being associated with a particular management model of facility.

Thirty four percent of respondents reported that a member of their household had been unable to afford the fee at some point during the past year. This situation was usually resolved by the person being allowed to use the facility and pay later (52%) or by them borrowing money (38%).

Latrine Facilities at home and plans for continued use of communal facility

The majority of communal facility users (93%) have no latrine at their home. The most common reasons cited for this are lack of space (52%) and lack of money (37%). Eighty eight percent of users expected to still be using the communal facility in the same way in a year's time while 12% did not expect to be doing so. Fifteen percent of users said it was possible that they would construct a latrine at home in the coming year and one percent thought it very likely. The likelihood of constructing their own latrine was most notable in poverty pocket 3.10 (municipal facility) but there were no

⁵ The municipality does not charge a user fee however, at some municipal latrines users pay a fee to a local resident who provides basic a cleaning service.

⁶ The higher mean fee at Police Lines was an effort to improve the facility, mainly the capacity for water storage to address the problem of a lack of water that the facility was facing at the time of the survey.

obvious socio-economic differences to suggest why they would and others would not construct a latrine at home.

Reported latrine ownership is higher in the household survey than in the exit interviews. Only 47% of householders interviewed in the household survey had no latrine at home. There are considerable differences between slums in the prevalence of latrine ownership ranging from 88% at 4.20 to 18% at 3.20 (these figures have not been adjusted for possible spatial clustering).

Satisfaction with facility

Most users interviewed at latrine facilities (65%) said they were satisfied with the condition of the latrine with 6% reporting they were very satisfied and 29% reporting that they were not satisfied. Police Lines scored highest with 100% users' satisfaction. Sulabh and municipal facilities ranged between 37 – 82% users satisfaction. There was no difference between men and women in terms of satisfaction with facilities. The features that were most liked about all latrine facilities surveyed were convenience (38%), privacy (23%) and protection from animals (13%). The most disliked features were dirt and smell (64%), queue (19%) and lack of water (11%).

Contribution to ending open defecation

Of 327 householders interviewed at home 69% report open defecation as their usual practice and 25% report using a community latrine. Taking only those households with no latrine of their own (n=152) 43% report using an open defecation site and 49% report using a communal latrine. Even at Police Lines, with the best facility, out of 36 households with no latrine interviewed, 21 (58%) reported open defecation as being their usual practice.

Of 325 latrine facility users from households with young children 70% reported disposing of young children's faeces in a drain or in the garbage. Thus, although disposal of children's faeces in

communal latrines is possible it is not commonly practiced and children's faeces continue to pose a health risk.

Barriers to use of communal facilities

Distance to the facility may be a barrier to use. Proxy distances were measured as the difference between the GPS north readings for the facility and the house. The same was done for the GPS east readings. These differences were squared and summed. The square root of the sum of differences was used as a proxy for the straight line distance (no adjustment has been made for spatial clustering of households) and it has been assumed that poverty pockets are approximately linear or rectangular in shape with the communal facility situated close to one edge.



Children outside child-friendly WaterAid-funded latrine block

Proxy distances for non-latrine owners who reported open defecation as their usual practice were compared with those who did not report open defecation as their usual practice, for each poverty pocket. In some poverty pockets greater distances to the communal facility were measured among those reporting open defecation.

Surprisingly however, convenience of the facility was almost never mentioned as a reason for not using it. It may be that distance interacts with other variables such as cleanliness, cost and convenience of the open defecation site (more detailed multivariable analysis would be needed to explore this further). The most common reason given by 58 non-facility users with no household latrine for not using the

communal facility was having to pay (24%) followed by not liking the facility (22%).

Discussion

The small sample sizes in this exploratory study preclude the drawing of general conclusions based on the comparison between facilities. Nevertheless some points clearly emerge from the study.

- Based on the results above it is apparent that the facilities studied are used to fulfil regular, domestic sanitation needs rather than to serve the needs of transitory populations.
- On average 481 people use each communal facility daily although there is great variation between facilities (range 124 – 896 users).
- Satisfaction with user fees varied across facilities but in general the majority of those who used the facilities thought the fees to be fair.
- The mean prevalence of latrine ownership in the poverty pockets studied, estimated from the household surveys, was 53%. This is an increase on figures in 2006/07 (ignoring assumptions in measurements).
- Although the prevalence of latrine ownership may be higher than expected the majority of households with no latrine of their own did not expect this situation to change in the near future, continuing dependence on communal latrine facilities.
- Among communal facility users the majority were satisfied with the conditions of the latrines they used; however, there was considerable variation between facilities.
- Dirt and smell were the things that were most often reported as being the worst features of communal facilities, for both genders. Queuing and lack of water were also identified as problems. Privacy and security did not come out as frequent concerns for men or women.
- At each facility daily use by males was more than double that by females, though the primary purpose for using the facility (defecation) was the same. The possibility that there are some barriers to female use of facilities deserves further investigation.
- No gender differences were reported in use of communal facilities among respondents in the household survey.
- Open defecation continues to be a common practice in all poverty pockets studied, with cost being the most common reason provided for not using the communal latrine facilities. Physical conditions of facilities may be a disincentive to use communal latrines, however, even at Police Lines, where conditions of the communal latrine were generally very good open defecation continued to be reported by more than half of respondents from households with no latrine.
- Distance to the facilities from the house may constitute a barrier to their use. Data suggest that non-users tend to live at greater distances from the communal latrines than users. It is likely that distance interacts with other variables relating to latrine condition and operating characteristics as well as convenience of open defecation sites.
- Open defecation by young children also continues to be common as evidenced by the fact that only 3% (44 people) of latrine users were bringing a young child to defecate, despite some being equipped with child-friendly toilets. This may be due to a lack of supervision from adults being available. Child friendly facilities could be useful for toilet training children though.
- The observed proportion of communal latrine facility users who were children (51%) was in line with the estimated proportion (from the household survey) of the poverty pocket populations comprising school age children (57%).

Conclusions

Although the findings presented in this report are based on a small number of facilities in a single city, the general patterns could be considered with respect to sanitation policy for urban poverty pockets. These include:

1. Communal facilities can make a potentially important contribution to reducing open defecation so long as their operating conditions are good enough to encourage use.
2. Provision of communal latrine facilities in the manner and on the scale of those studied is not sufficient to end open defecation. Even where good facilities are available, the majority of households with no private latrine continued to choose open defecation as their preferred sanitation option. Distance appears to play a role in their decision.
3. Communal facilities were rarely used as places for young children to defecate, even when child-friendly facilities were available allowing a public health problem to continue.
4. There was a high ratio of male to female users of communal facilities implying that many women and girls continue to prefer open defecation sites over communal facilities.

Further qualitative and quantitative work is needed to understand and verify the patterns of use observed. A policy implication arising from these findings is that it may not be possible to provide for the needs of all poverty pocket residents through the provision of single, centralised sanitation blocks and it may be necessary to consider options for more decentralised service provision for adult sanitation and for the disposal of young children's faeces.

Sustainability

The continued use of facilities by a sizeable minority of households that is prepared to pay a user fee is clearly an important factor with respect to

sustainability. No major changes in this situation were anticipated in the near future. A slight decrease in users may occur as households construct latrines. Although there was considerable variation in users' satisfaction with the condition of and cost of the facilities in different poverty pockets, the majority of users were satisfied with both.

The total numbers of users of many of the facilities are relatively low. This may impact on the extent to which facilities are able to recover their running costs through user fees. However a more detailed study would be needed to confirm the extent to which this is the case. The long-term viability of community management structures is also an important issue that deserves additional attention.

Recommendations

It would be useful to conduct further in-depth qualitative work to better understand the environmental factors, attitudes and beliefs that determine choice of defecation place and to explore:

- i) What would make the communal facility attractive as a defecation place; and
- ii) What would make open defecation intolerable?

Physical conditions and operating characteristics varied considerably between communal facilities. Detailed information on these variables was not collected in this study. Future work could usefully collect this data allowing multivariable modelling to identify the features that are most important in influencing the use rates and user satisfaction.

It would be useful to conduct qualitative work on the attitudes and practices into the apparent continued issue of open defecation by young children. The results could be used to design an intervention to improve faeces disposal practices which could then be tested in the field.

The sustainability of community management of facilities remains

unproven. A case study of selected community managed facilities in India could help assess the long-term viability of this management approach and highlight factors contributing to success or failure.

The reasons underlying the apparently high ratio of male to female users are not explained by the current study and deserve further exploration.

Summary: Karina de Souza

Photographs: (1) Therese Mahon/WaterAid, (2) Marco Betti/WaterAid

Date: April 2010

London School of Hygiene & Tropical Medicine

(University of London)



Keppel Street, London WC1E 7HT

Tel: 020 7636 8636 Fax: 020 7436 5389 Web site://www.lshtm.ac.uk

Improving health worldwide



WaterAid transforms lives by improving access to safe water, hygiene and sanitation in the world's poorest communities. We work with partners and influence decision makers to maximise our impact.

www.wateraid.org

WaterAid
47-49 Durham Street
London, SE11 5JD
Tel: +44 (0)20 7793 4500
Facsimile: +44 (0)20 7793 4545
Email: wateraid@wateraid.org

Registered charity numbers 288701 (England and Wales) and SC039479 (Scotland)