TITLE: <u>Perceptions of gender based violence around public toilets in Mumbai slums</u>

AUTHORS

Dr Jyoti Belur*

Lecturer in Policing
Department of Security and Crime Science
University College London
35 Tavistock Square
London WC 1H 9EZ
UK
Ph: +44 (0)20 3108 3050
Email: j.belur@ucl.ac.uk

Dr Priti Parikh

Lecturer
Department of Civil, Environmental & Geomatic Engineering,
University College London,
117 Chadwick Building
Gower Street
London WC1E6BT
UK
Ph: +44 (0)2031084101
Email: priti.parikh@ucl.ac.uk

Dr Nayreen Daruwalla

Programme Director
SNEHA
Shastri Nagar, Santa Cruz (W),
Mumbai - 400 054,
INDIA
Email: nayreen@snehamumbai.org

Dr Rukaiya Joshi

Professor
S.P. Jain Institute of Management Research
Andheri (W)
Mumbai 400053
India
Email: rukaiya@spjimr.org

Ms. Rini Fernandes

SNEHA
Shastri Nagar, Santa Cruz (W),
Mumbai - 400 054,
INDIA

*Corresponding author

Perceptions of gender based violence around public toilets in Mumbai slums

Introduction

In developing countries, urbanisation results in the formation of slums, characterised by environmental degradation, lack of provision of water and sanitation, lack of access to affordable energy, and dilapidated housing stock (McFarlane 2008). Gender related vulnerability around use of sanitation and toilet facilities in developing countries, especially India, is well documented (SHARE 2014, Gershenson and Penner 2009, Molotch and Noren 2010). The lack of rudimentary toilet access and the insecurity women face in accessing sanitation and relieving oneself in the open are serious issues and have recently been the subject of much public discussion in India (Chakrabarty 2015). The topic has drawn the attention of the Indian Prime Minister, whose call for a 'Clean India' envisions the construction of millions of public toilets in India for women (*The Guardian,* 2014*)*. Lack of resources and high population densities combined with space constraints imply many low-income communities only have access to public toilets in lieu of household individual facilities (Elledge and McClathchey 2013). Women in slums bear the brunt of inadequate infrastructure provision resulting in reduced well-being (Parikh, Kun, Parikh, McRobie and George 2015). With slum population rapidly increasing in countries such as India there is a need to address infrastructure provision to ensure the security and well-being of women. However, the lack of clarity on land tenure and complex community dynamics pose challenges for the construction and maintenance of public toilets and collection of tariffs to ensure cleanliness and security (Elledge and McClathchey 2013).

There is robust evidence to show that poor urban Indian women who access communal public toilets are more vulnerable to physical and sexual violence not only in rural areas but in urban spaces as well (Viswanath and Mehrotra 2007, Srinivasan 2015). Arguably, communal facilities such as public toilets, if not well sited and properly designed, facilitate gender based crimes such as eve teasing[i], assault, and rape (Jagori and UN Women 2011, House, Ferron, Sommer and Cavill 2014), potentially acting as crime generators. Factors such as inadequate provision of basic sanitation, lack of lighting, and lack of police presence in slums have been highlighted as facilitators for violence against women in slums in third world countries (Lennon 2011; Amnesty International 2010, Gosling, Irvine, Schechtman and Velleman 2012, Viswanath and Mehrotra 2007). However, there is lack of research on the specific urban planning features such as approach roads, adequate lighting, access to and use of public toilets that are potentially risky and either attract or facilitate crimes against women.

This paper contributes to the scant literature on women's experiences and perspectives on public toilets (Afacan and Gurel 2014, McFarlane 2008) by examining users' perspectives in two slum areas of Mumbai, a large metropolitan Indian city. According to the Census of India, 2011, slum households constitute 41.3% of total urban households in the Municipal Corporation of Greater Mumbai who rank access to water and toilet facilities as among the most important issues they face (Graham, Desai and McFarlane 2013).

Situational aspects of insecurity around public toilets

Inadequate number of toilet seats, poor maintenance combined with inadequate water supply, and absence of electricity are a feature of public toilets in slums in Mumbai (MDHR 2009). Specifically, poor or inadequate lighting in public toilets give rise to feelings of insecurity and fear of being attacked (Afacan and Gurel 2014). Previous studies on sanitation and toilet provision in slums have identified difficulties faced by women and children due to restricted or limited access to facilities (Risbud 2003, Lennon 2011) and have highlighted the resulting insecurity in the form of women often experiencing verbal, physical and sexual assaults (Jagori and UN Women 2011). Overall, improper siting of toilets, unsafe approach roads to access public facilities (Lennon 2011), poor maintenance in the form of broken doors and windows, missing locks, absence of lighting, poor approach to the toilet and lack of guardianship have been identified as factors facilitating crimes against women (SHARE 2014, Afacan and Gurel 2014, House et al 2014, UN Water 2015).

Identified factors contributing to gender based violence around public toilets in the literature suggest that some of the explanations for this crime are anchored in the Routine Activities Theory. This place-based explanation suggests that crimes occur at the conjunction between a motivated offender and a suitable target, in the absence of capable guardians (Cohen and Felson 1979). Consequently, a situational crime prevention approach seeks to reduce crime by reducing opportunities to commit specific crimes (Clarke 1995). In order to make crime prevention recommendations, it is essential to analyse situational conditions that facilitate or generate crimes that are context specific. Prevention then involves manipulating the environment to reduce opportunities and increase the risk of committing crime, either by hardening the target, i.e. making it more secure, or by increasing guardianship (Clarke 1995). Therefore, it is important to identify particular situational factors

existing in slum areas around different types of toilets that could be potentially criminogenic. Further, it is also important from a prevention perspective to elicit the views and suggestions of community members in order to generate organic solutions to improve security around public toilets in these settlements. Therefore, the primary aims of this research were to understand the experience and perception of insecurity around public toilets, identify sources of that insecurity, and recommend possible solutions to the problem.

The research focuses on understanding women's perspectives on quality and provision of sanitation facilities in informal settlements and their views and experience of crime and insecurity around use of public toilets. Different types of public toilets are usually distinguished on the basis of who owns, constructs and/or manages them. Responsibility for constructing and or maintaining them can rest with the local government, housing development corporation, NGOs, community groups, private contractors or a combination of two or more of the above (Burra et al 2003, Tomlinson 2015). However, we found that the toilets differed also in terms of physical structure, size and location. The paper focuses on investigating whether fear of crime and insecurity is related to perceptions and experiences of crime, and/or, are alternatively rooted in situational factors such as siting, specific structure, access, provision of water, electric supply, and other security features of different kinds of public toilets in these settlements.

Methodology

Research sites

The official definition of a slum household is "a group of individuals living under the same roof lacking *one or more* of the conditions" which include- 'access to improved water, to sanitation facilities; no overcrowding, structural durability of buildings, and security of tenure' (UNHABITAT's definition of slums, 2003: 18, emphasis in original). Risbud (2003) reports that nearly 73 percent of slum dwellers in Mumbai use communal toilet facilities provided by the government, 28 percent defecate in the open and only one percent own individual toilets and less than one percent use pay per use toilets provided by NGOs. Choice of slum areas for this research was dictated by the fact that three authors were already involved in outreach work in these areas and had good community contacts. Although admittedly, areas selected were in more affluent areas of the city and therefore not representative of the poorest living conditions. Nonetheless, households surveyed fitted into the criteria identified by UN Habitat.

The two informal settlements identified were Dharavi and Nehru Nagar in Mumbai. Half of Mumbai's population i.e. 9 million people live in densely populated slums settlements covering only five percent of the land area (World Bank 2009) where public toilets are the prime sanitation option (World Bank and WSP, 2006). Dharavi, home to over a million inhabitants, is spread over 175 hectares of land and is in the heart of the city near the international airport. Ownership of prime real estate land is highly fragmented between state government agencies, local authority and private ownership (Bapat and Agarwal 2003). One of the main reasons for inadequate provision of toilet facilities by the Municipal Corporation is due to disputes with land owners who are unwilling to give permission for fear that it would legitimate these settlements (Burra et al 2003).

Nehru Nagar, situated in the affluent western suburb of Juhu in Mumbai has been in existence for over 60 years. It has a population of approximately 36000, 40 percent of which is female, and has over 6000 dwellings. It is a fairly settled community comprising of original migrants from other parts of the country. Typically, the settlement also has a small rolling population of male migrant labourers who come to Mumbai in search of livelihood each year. Most employment is either in unskilled or semi-skilled jobs such as private security, driving and domestic help. Nehru Nagar is home to some small scale, labour intensive industrial establishments producing ready-made garments and wooden products. Like most other informal settlements, Nehru Nagar also has poor infrastructure and sanitation facilities. The settlement covering approximately one square acre has 6 large public toilets. It has one main arterial road that is poorly maintained, with narrow by-lanes spanning a couple of feet.

Research Design and Instrument

It is well-documented that women in slums rarely report crimes to the police, either due to fear or lack of access (Jagori and UN Women 2011). Since it is no secret that official reported crime figures do not reflect actual experience of crime, the 'dark figure of crime' is estimated through victim surveys (Skogan 1977). In the absence of official or secondary data, we adopted primary data collection in the form of household surveys, as the best method to gather information about women's experience of violence around public toilets in urban informal settlements as well as their perception of insecurity around sanitation provision in urban informal settlements. Additionally, focus group discussions and semi-structured interviews

with stake holders were conducted to get a first-hand perspective on the issues identified via the surveys.

The research instrument was created by the first two authors, piloted and tested in the slum areas on community workers and was refined and recrafted in consultation with all the authors and community workers[1]. The comprehensive research instrument consisting of 76 items was grouped into 10 themes covering demographic information, toilet provision, maintenance, usage, perception of and experience of crime, perceptions of perpetrators, and response to victimisation, health impact and suggestions for improving security.

Training and Conducting the Research

A total of 142 household face-to-face surveys were conducted in the identified slum areas (roughly 50 % from each) with the help of community and case workers and researchers, who were identified and co-opted by co-authors and the local organisations they represented[2]. The survey instrument was administered to every fifth house around seven identified toilet sites (four in one and three in the other) of the two slum areas. The first two authors along with key case workers visited all seven toilet sites and took photographs. The selected toilets were a mixture of toilets with or without caretakers; toilets sited either to cater for particular lanes, ward blocks, or on the main road; toilets built by the community, the BMC (Bombay Municipal Corporation), or by social service or private organisations.

Training was provided to local community workers and researchers selected to administer the survey instrument. The survey was piloted on key case workers,

---

[1] Questionnaire available on request.

[2] SNEHA and SP Jain Institute of Management Research.

refined, and then translated into the local language. Topics covered in the survey ranged from provision of sanitation facilities, design and location of toilets, experience of violence, health related problems and possible solutions to reduce fear and experience of crime around toilets. The first and second authors conducted two focus group discussions (FGD) with women residents in the two urban informal settlements and 6 individual semi-structured interviews with stakeholders including toilet caretakers, local political leaders and community workers. The FGDs and interviews were transcribed by the first two authors and analysed thematically in line with the survey themes, to scaffold the survey findings.

Description of the sample

Of the total women surveyed (N=142), 65 percent of women were between the age of 18-37 years with only five women being over 60 years of age. A large majority of women (83%) reported that they were married, while only 22 percent had some form of employment. A majority of respondents were literate and had some formal education with only 12 percent of the women sampled reported receiving no formal education. Just under three quarters (72%) of women surveyed in both slum areas perceived that they were part of a settled community – furthermore, over 78 percent of the respondents had lived at the same address for over ten years and claimed to 'own'[ii] their properties. The slum areas in focus were not the poorest as evidenced by the fact that only seven percent of the respondents reported their monthly household expenditure being less that INR 5000 (approximately £50).

Findings

Toilet Facilities and Usage

A great majority of respondents [over 92% (N=142)] said they used public toilets and the remaining had their own private toilet facilities. It was interesting to note that none of the respondents reported open defecation, although in some cases, we observed children defecating in the open area around the public toilets. Approximately 95 percent of respondents said that toilet facilities were less than 500 metres away from their dwelling, 67 percent of whom reported it as being in the vicinity of less than 100 metres. An overwhelming majority (88%) of women surveyed reported that toilets were cleaned daily or twice every day. Our findings, confined to specific parts of the slum areas, were an improvement on earlier findings on public toilets in slums, where provision was non-existent or at best minimal and was often unusable (Bapat and Agarwal 2003, Kumar Karn and Harada 2002).

According to the survey, all public toilets were 'pukka' (permanent) structures made of bricks and cement, with a proper roof, doors and windows. Access to toilets was either paved, or by means of brick or tar roads as reported by 95 percent of respondents. Over 86 percent reported that toilets had doors and working locks which were fairly regularly repaired as necessary. Toilets reportedly also had windows and a proper roof. However, there was no mention of special toilet facilities to account for requirements of age or disability. This lack of provision of public toilets accounting for age and disability and its absence from public discourse is not uncommon even in developed countries (Serlin 2010).

Close to 65 percent of women surveyed said that they had 24-hour access to public toilets while the remaining said they that restricted hours for toilet use. Nearly 91 percent of women visited the toilets alone and 59 percent women reported that they visited the toilet only once a day and the remaining reported usage from between 2-4

times a day. Maximum usage was between daylight hours of 8 am and 12 noon (64%), and minimum during the period 8 pm to 4 am (10%) indicating that women appeared to take precautions and reduce risk by limiting usage to daylight hours or times when there would be enough public presence to ensure some incidental guardianship around the toilets making them 'safer spaces' (Viswanath and Mehrotra 2007).

Eighty percent of women surveyed reported that there were equal number of cubicles for men and women and the remaining respondents either did not know or reported existence of more cubicles for men. Most lane toilets had unisex cubicles in Nehru Nagar. The survey also showed that since almost all female children and a fifth of male children use women's cubicles, clearly women are disadvantaged in the provision of toilet facilities. This is not unique to India, since public toilets in many countries, both developed and developing, reflect discrimination in terms of gender, age and disability (Anthony and Dufresne 2007).

Provision of Water, Electricity and Maintenance:

Although 92 percent of those surveyed said that there was continuous electric supply, nearly three quarters of respondents reported that toilets were lit by only one bulb – a finding echoed by interviewees and focus group participants. A majority of women (81%) reported that the route to the toilets was illuminated, but only over half (56%) reported that the area around the individual cubicles was lit at night. There was a distinction between lighting facilities around cubicles in both slums with 80 percent of respondents in Dharavi reporting the presence of lighting (usually one light bulb) versus only 30 percent of respondents in Nehru Nagar.

A majority (67%) of women reported that the toilets received regular BMC water supply. However, participants in the FGD discussed the lack of continuous water supply in toilets. Women reported that they had to carry water from home, or contend with locked toilets when there was no water supply. Although reportedly the toilets had near continuous BMC water supply, one interviewee said,

"On some days, when there is no water supply, the caretakers just lock the toilets and go away. How are we supposed to manage? People still have to use the toilets, don't they?" (Interviewee 1)

Another FGD participant said, "The caretakers often ask us to bring buckets of water from our house – that is so difficult" (FGD1). Often, this resulted in acrimony according to this interviewee who said,

"There is often friction between ladies and the caretakers because these ladies don't pay easily. Women fight back by saying if you are not allowing us use of water then why should we pay?" (Interviewee 1).

It was interesting to note that the survey did not actually pick up on the problems associated with water supply to the toilets but FGDs and interviewees dwelt on this issue in some detail.

Interviewees, including the caretaker, indicated that continuous water supply could only be ensured by offering bribes to public officials and that this was an added expense for the contractors. Interviewee 5 said that all toilets had illegal water connections. In his experience BMC did not provide legal connections on the grounds that the settlement is illegal and therefore cannot be sanctioned a water line. We were told that recently some public toilets have begun to augment their water provision with bore wells.

Participants in both FGDs said that the septic tank was rarely cleaned and that 'the toilets become messy and stink'. Another problem was frequent toilet blockage because women disposed of sanitary products in the toilets or near the toilets. Lack of appropriate sanitary product disposal was cited as a major problem for women in slums – a finding that was echoed in a previous study (Anthony and Dufresne 2007). Women participants in both the FGDs admitted that sometimes women themselves created a situation of conflict with other users or the caretaker either through using too much water or disposing sanitary products improperly. However, often this was only because their legitimate needs were not met in the ordinary course of events. Inadequate water supply and lack of sanitary disposal bins was a major problem identified in the FGDs.

Role of Caretaker

Just under 70 percent respondents reported the presence of a caretaker for the toilet. Only some respondents (N=89) gave more information on the type of caretaker) as being mainly 'paid official' (40) and 'on contract' by private providers (44) with only five people reporting that the caretaker was an unpaid volunteer. The caretaker was expected to collect money, maintain order in the toilets, oversee maintenance and cleanliness, besides also providing security to users. Clearly, caretakers we spoke with were neither trained nor equipped to maintain order or provide security and were often afraid for their own personal safety. One FGD1 member said, "They [caretakers] sometimes are so afraid that they lock the toilet and go away because they are scared of having their money snatched during less busy times". Little or no attention has been paid to the role of the caretaker in the literature.

When respondents were asked how effective they thought the caretakers were, over three quarters of respondents (78%) thought they were moderately or very effective and only three percent thought they were ineffective. However, since we had not specified the dimension on which effectiveness was measured, it was unclear which of the following dimensions the respondents were referring to: maintaining security, managing queues and efficient turnover, collecting payment, or overseeing maintenance and cleanliness of the toilets. FGDs indicated that caretakers were often unsympathetic and uninterested in anything beyond collecting money and keep the users moving along. They were also often in conflict with women over water usage and payments.

Interviewee 1 said that "the caretaker was responsible for women's safety, if there should be any incident of assault or eve teasing, the caretaker would first be beaten up by the mob". However, women in the FGD said that often caretakers themselves made comments or "looked with dirty eyes" at young women visiting the toilet, increasing their unease, echoing findings in other studies and cities in India (Viswanath and Mehrotra 2007).

 Insecurity and Experience of Crime

The survey and FGDs explored the actual experience of crime and women's perception of fear of crime around the use of public toilets. There were clear patterns of differences in, both, experience and fear of crime, not only in the two slum areas, but also around different types of toilets.

Experience and perception of Crime

When asked about personal experience of any particular crime associated with use of public toilets, nearly a fifth of the women surveyed (22%) reported being subject to eve teasing, and another fifth (20%) to a variety of other crimes such as assault (12%), robbery (8%), and indecent exposure (1.5%). However, interestingly a majority (62%) of women reported that they had never experienced toilet related crimes as can be seen in Figure 1 below.

Figure 1 about here

The biggest source of insecurity was 'eve teasing', that included whistling, passing explicit comments, singing lewd songs, and inappropriate touching. There were no reports of attempted rape or sexual assaults. The exact Fischer Test has been used in this paper to compare and test significance of differences for categorical data in small data sets. Interestingly, the difference between the experience of eve teasing and the perception of threat for respondents was significantly higher in Nehru Nagar compared to Dharavi (exact Fischer Test value 0.00843<0.05). The reason for this insecurity was not definitive but focus groups discussants suggested that the number of migrant single men living in Nehru Nagar, who often hung around on the streets in groups of twos or more, sometimes made it difficult for women to access public toilets without being harassed in some way. This did not seem to be a problem to the same extent in Dharavi.

Perception of insecurity

A large majority of women (91%) reported that they would visit the toilet alone and not necessarily in the company of other women, indicating not only a high level of confidence in their own ability but also expectation of security. Overall, 66 percent of women reported they felt secure or very secure when using public toilets and about

16

15 percent felt insecure while doing so. Figure 2 below indicates the patterns of perception of crime in the two slum areas. While eve teasing was of greater concern in Nehru Nagar, residents of Dharavi were more fearful of robbery. Overall, the levels of concern about safety in Dharavi were lower than Nehru Nagar. A part of the explanation for this difference might be greater confidence in the police as indicated in findings to follow in the next section.

Figure 2 about here

The comparison between Figures 1 and 2 demonstrates that actual experience of crime was much lower than fear of crime in both slum areas. However, focus group participants (FGD1) narrated an isolated incident of a young child being raped on her way to the toilet a few years ago which still haunted them collectively. Thus, anecdotal evidence of past crimes continued to influence current perception of the risk of crime occurring.

Siting of male and female facilities

Almost all toilets surveyed had adjacent cubicles for men and women. Women in Dharavi have reported elsewhere that since the cubicles are sited together with no wall separating the genders, often they are accosted by men who expose themselves or make lewd comments or gestures at times when the toilets are deserted and there are hardly any people around (typically in the afternoons) (Daruwalla, Levy and Osrin 2015). On the other hand, siting women's cubicles separately, especially if they are located away from crowded spaces, reduces the availability of guardianship in the form of passers-by and can potentially increase the risk for lone women visiting the toilet.

Another issue with siting male and female cubicles in one toilet block was uncovered in an interview with a key stakeholder (local political representative). We were told and visited one of the larger two-storied toilet blocks with 8-10 cubicles for women on the ground floor and about 22-25 cubicles for men on ground and first floors. Interviewee 2 observed that although private toilet providers were charging users a high rate, they provided only two working taps for the women's toilets on the ground floor, a complaint echoed by women in the focus group (FGD 1). This particular design also had security implications. We were told that men loitered in small groups on the first floor of the toilet block and drank alcohol or gambled, increasing the sense of insecurity for women using the toilets on the ground floor. Thus, perception of security was linked not only to particular locations (lane or non-lane), but specific structural designs of public toilets.

There is a need for further research on this topic before any definitive conclusion can be reached with regards to guiding policy on siting of toilets in slums.

Sources of Insecurity

Respondents were offered a variety of options related to the physical environment of public toilets to identify potential sources of insecurity. Findings indicated that inadequate lighting was considered to be a source of insecurity by just under half of our respondents. Interestingly, just over a quarter of the respondents did not perceive any source of insecurity in the usage of public toilets as indicated in Table 1 below.

Table 1 about here

Further, our analysis indicated that there were important differences in fear of crime and perception of sources of insecurity based on the type of toilet and the actual siting of male and female cubicles.

Lane versus non-lane toilets

Our analysis indicated clear differences in the experience and fear of crime between two main types of public toilets– large public toilets with multiple cubicles sited on the main roads and crossings and small unisex toilets with two or three cubicles catering to select families within a lane and sited typically at the end of the lane to toilets Those toilets within the lanes will be referred to as 'lane toilets' herewith.

After visiting the sites, our working hypothesis was that lane toilets would be safer than the non-lane larger public toilets, since access was limited to families living in the lane and there would be adequate guardianship to ensure appropriate behaviour. However, the results for both Nehru Nagar and Dharavi indicated that respondents perceived lane toilets to be at higher risk for crimes such as rape, violent assault and property crime such as robbery. In Dharavi, respondents using lane toilets also felt that eve teasing was a challenge (Table 2). Although the experience of crime in lane toilets was not much higher than non lane toilets, the perception of risk was considerably higher for some crimes in lane toilets which nullifies the hypothesis of lane toilets encouraging appropriate behaviour.

Table 2 about here

Lack of lighting was perceived to be a source of insecurity by users of lane toilets in both communities. In Nehru Nagar over half of lane toilet users (55%) cited inadequate lighting and a third (31%) cited unsafe citing of toilets as sources of insecurity. In Dharavi, a third (30%) of lane toilet users cited inadequate lighting and

19

lack of police support as sources of insecurity as can be seen in Table 2 above. Another explanation was provided by FGD participants who said that often lanes are deserted during daytime working hours and a determined offender is able to prey on lone women without risk of being caught.

The sample size of respondents using lane toilets was very small and hence it was not possible to establish significance of test results. Future work should include interviewing a larger sample of lane toilet users to unpack this phenomenon.

Suggestions for improving security

The Routine Activities Theory approach suggests crime prevention solutions should address environmental conditions to reduce criminogenic opportunities. While the five situational crime preventions mechanisms[iii] may be generic, their application has to be tweaked to suit particular situational conditions (Cornish and Clarke 2003). Accordingly, our research indicated that the range and patterns of distribution of suggestions to improve security around public toilets were quite different in the two slum investigated as shown in Figure 3. It is interesting to note that the support for most factors was stronger in Dharavi as compared to Nehru Nagar, except for 'the need for increased awareness' around safer use of public toilets. This difference could potentially have three explanations: firstly, it might be an artefact of the research process and differences in the research team which encouraged respondents to make more selections in Dharavi as compared to Nehru Nagar; secondly, it might be indicative of the fact that women in Dharavi were more vocal and had firmer opinions on this issue compared to their counterparts in Nehru Nagar; and finally, it could also be an indirect indicator of overall better levels of satisfaction

with public toilet provision in Nehru Nagar as compared to Dharavi. Future research could be shaped around testing these hypotheses.

Figure 3 about here

The importance of adequate lighting in and around public toilets was highlighted when the overwhelming majority of respondents reported that better lighting outside the toilets and inside the cubicles would improve perception of security. In particular, over 90 percent of respondents in Dharavi and 72 percent in Nehru Nagar noted that improved lighting outside toilets would improve security of public toilets. The next most popular measures were provision of a 24-hour caretaker for the toilet (81 percent in Dharavi and 52 percent in Nehru Nagar), followed by better water supply and cleaning facilities (89 % in Dharavi and 30 % in Nehru Nagar). Despite evidence from other research, and our interviews and FGDs raising security concerns about the siting of male and female cubicles together, only a third of respondents felt that separate siting of cubicles would improve their perception of security.

Only 17 percent of respondents felt that mobile phones had a role to play in improving security. When asked whether carrying a mobile phone would result in a positive impact (improved security) or negative impact (theft), 43 percent of respondents thought carrying a mobile phone while using the public toilet would make you more secure and 13 percent thought it would increase vulnerability. Among a variety of measures to improve security, 26 women thought carrying a mobile phone would be an effective option, among others.

It was interesting to note that overall, nearly 92 percent women said they would report a crime to someone and half of all respondents said they would report it

specifically to the police. However, respondents were significantly far more likely to report to the police in Dharavi than in Nehru Nagar as seen in Figure 4 below.

Figure 4 about here

In both slums together, over three quarters of women indicated that they would report the incident to their family, nearly half of them said the family or community leaders would hand the perpetrator over to the police station. This indicated a surprisingly high level of communication with the police, although it is not clear whether the police then recorded these incidents or informally resolved the situation. This finding is in some contrast with previous studies where informal settlement dwellers and women in general have exhibited little or no faith in police support (Gosling et al, Massey 2011, Jagori and UN Women 2011). Part of the explanation might be due to the fact that there is police presence in the form of a police chowki and a police station in the Dharavi area whereas Nehru Nagar does not have a similar level of police presence. Interviewee 1 said that community members were very vigilant and protective of their womenfolk – all volunteers were aware that if there was any untoward incident, they were to immediately inform the Beat Marshall from the police chowki, who would be there in no time. The interviewee himself had all the contact numbers for the police officers because he was on the police committee. Discussions with case workers and focus group participants indicated the important role that NGOs play in working closely with women in slums and in empowering them to access police services in situations of violence.

Further, we suggest that perhaps the experiment of setting up of 'police panchayats' (made up of a majority of female residents and 1 police officer) in several slum areas including Dharavi, in around 2003-2006 (Roy et al 2004), might have been

responsible for the high levels of engagement with the police in Dharavi. These 'police panchayats' were set up in recognition of the fact that women are disproportionately larger victims of crime and in order to increase police accountability in slum areas. While the police would like to believe that such arrangements make slum residents more confident about using police services when needed (Roy et al 2004), the difference in respondent willingness to engage with the police in the two slum areas could be indicative of the fact that these structures have bridged the gap that is traditionally said to exist between the police and slum dwellers to some extent and provides a way for informal resolution of disputes or conflicts. The working and legacy of these police panchayats is an area of further research in ensuring women's security in public places.

Seventy percent of respondents in Dharavi thought more police patrols would increase public safety of toilets. It is interesting to note that a majority of these were from Dharavi – a difference that was statistically significant (exact Fischer Test value 0.002561<0.05) indicating again the difference between the way women in Dharavi perceived that the police made them feel safer (even if such confidence was misguided)[iv]. A systematic review of evidence has indicated that police patrols by themselves, when implemented without thought or a problem oriented focused approach, have an insignificant impact on crime prevention (Weisburd 2004). Nonetheless, mere police presence continues to be considered effective in popular perception. This was indirectly reflected in the findings when only a small proportion of respondents' (17%) reported feeling unsafe as a result of lack of police patrols, a greater proportion (see Figure 4) suggested that increased police presence would improve perception of security.

A majority of respondents (82%) felt that community interventions would improve security around use of public toilets. Community intervention involved a range of activities. Specific support for interventions involving the local elected representative or community leaders were supported by 42 percent and 20 percent respondents respectively, while only a third (33%) felt that community involvement in the form of setting up community groups, to facilitate provision of toilet facilities would be the most effective way of galvanizing the community.

Thus, the evidence suggested that solutions emphasised equally on making toilets more secure but at the same time increasing guardianship of the toilets either by increased police presence, more vigilant community action schemes, or provision of suitable caretakers by private providers.

Traditionally, provision of public toilets in slum areas was the purview of the local elected representative. Over the years, despite NGOs and charity organizations funding provision for water and sanitation in various World Bank aided programmes in Mumbai such as the Slum Sanitation Programme (McFarlane 2008, Burra et al 2003, Satterthwaite, McGranahan and Mitlin 2005), the power of elected representatives appears undimmed in the eyes of our respondents. There was less support for community led toilet provision and more expectations from elected representatives. Political parties, bureaucrats and other elected representatives often use the provision of toilet blocks as a means of manipulating votes and is part of the political patronage extended to informal settlements (McFarlane 2008). Evidently our respondents were aware of their democratic power and still called upon elected representatives to help solve some of their basic problems.

Summary and Conclusion

Our research indicates that although the condition and maintenance of public toilets was reportedly better than average for slums reported in the literature (Tomlinson 2015, McFarlane 2008, Sharma and Bhide 2005) provision was inadequate in comparison to requirements of the population they serviced. Factors such as good access to permanent/ solid toilet facilities, provision of water, electricity and a modicum of cleanliness were factors that made toilets in the area a step better than in other areas of the same slums and in other slum areas. However, FGD participants expressed the opinion that toilet owners and/or caretakers were exploitative and charged too much or did not spend adequate resources on maintenance and cleanliness.

Perceptions of insecurity were lower than what other research has led us to believe about slums. We suggest a number of factors to account for the findings: One explanation might be the fact that the chosen slums were not 'typical' of informal dwellings and were not at the bottom of the scale of settlements that are termed as slums. Additionally, the fact that these were stable communities, with privately owned accommodation might imply that there is some investment in keeping the area secure and safe with collective efficacy in ensuring security. Secondly, the level of insecurity in Mumbai in general is lower since it is perceived to be a one of the safest cities in India (Manju 2013, Phadke, Ranade and Khan 2011). Thirdly, women shaped their toilet habits around particular times of the day to reduce risk, so there was some form of natural guardianship around toilets. Fourthly, individual characteristics such as the fact that a majority of our respondents were married women, thus notionally were protected by family, and in a large number of cases, were educated and quite vocal, which might have added to their sense of security.

Finally, positive engagement with the police in one slum indicates the possibility that the police can take proactive steps to engage with the community and reduce the perception of risk and fear of crime among women. There is need for further research to test these hypotheses.

Research findings on suggestions to improve perception and experience of security of women's use of public toilets highlighted three major areas of relevance to policy makers and for future research. While these recommendations have emerged from micro sites and are relevant to those sites in particular, the broader approach of finding particular environmental solutions to reducing crime around public use of toilets is reaffirmed through the research. These findings would therefore be of relevance to other developing countries facing similar gender based violence problems by highlighting the need for situational measures to reduce crime.

Firstly, lack of adequate lighting was regarded as a source of insecurity and a facilitator for crimes. A systematic review indicated that well-lit neighbourhoods resulted in reduced property crimes such as burglary and theft but did not have much impact on violent crimes (Welsh and Farrington 2008). Thus, future research could indicate whether presence of adequate lighting in slums would reduce not only property crimes but also violent crimes and assaults against women in public places such as toilets.

Secondly, the possible use of technology, especially the use of mobile phones, to increase sense of security among women was explored in this research. The Government of India is encouraging and piloting the development of ICT and apps using GPS technology to co-ordinate provision of quick police response to distress calls from women through mobile phone applications or individual devices pioneered

by the Department of Information Technology (DIT) in 113 Indian cities (MHA Annual Report 2015). This might perhaps provide and easy and affordable means of increasing women's sense of security especially in cities. Evaluation of government and police schemes to support the use of mobile technology to increase security of women is another area of relevance to policy makers and researchers.

Finally, findings indicated that gender friendly infrastructure design of public toilets and better lighting, supported by police community relations and better guardianship would improve access to services for women and improve well-being. Research has indicated that better lighting also has the added effect of signalling investment in the community, increasing community pride and informal social control and reinforcing the message that the area has guardianship of civic authorities (Welsh and Farrington 2008). Community co-operation and working with civic authorities would go a long way in improving provision of secure sanitation facilities. There is a need for further research on the role of the caretakers and appropriate police-community engagement in improving women's experience and perception of security around use of public toilets in slums.

References

- Afacan Y & Gurel M., 2014. 'Public toilets: an exploratory study on the demands, needs, and expectations in Turkey' *Environment and Planning B: Planning and Design* 2015, **42**, 242 – 262

- Amnesty International (2010) *Risking rape to reach a toilet.* (Accessed March 2 2016) http://www.amnesty.org/en/library/info/AFR32/006/2010.

- Anthony K H, Dufresne M, (2007), 'Potty parity in perspective: gender and family issues in planning and designing public restrooms' *Journal of Planning Literature* **21** 267–294

- Bapat M and Agarwal I. (2003), 'Our needs, our priorities; women and men from the slums in Mumbai and Pune talk about their needs for water and sanitation' *Environment and Irbanization,* 15(2); 71-87

- Burra S., Patel S. and Kerr T. (2003), Community-designed, built and managed toilet blocks in Indian cities', *Environment and Urbanization,* 15(2); 11-33

- Chakrabarti A (2015), "In India, no toilets for women", *The Hindu,* July 11 (Accessed on 16 Feb 2016) http://www.thehindu.com/opinion/op-ed/in-india-no-toilets-for-women/article7408341.ece

- Clarke R. (1995), Building a Safer Society: Strategic Approaches to Crime Prevention, *Crime and Justice,* 19; 91-150

- Cohen L. and Felson M. (1979) "Social Change and Crime Rate Trends: A Routine Activity Approach." *American Sociological Review*, 44(4); 588-608

- Cornish D, and Clarke R. (2003) "Opportunities, Precipitators and Criminal Decisions", *Crime Prevention Studies*, 16; 41-96

- Daruwalla N, Levy C, Osrin D. (2015), *Indefensible Space.* University College London (Accessed on 18th March 2016) https://www.bartlett.ucl.ac.uk/dpu/indefensible-space

- Elledge, M. and McClatchey, M. (2013): "India, Urban Sanitation, and the Toilet Challenge", RTI Research Brief, September, available at: http://www.rti.org/pubs/rb-0006-1309-elledge.pdf (accessed on 16 August 2014), for the Gates Foundation's Reinvent the Toilet Challenge.

- Gershenson O, Penner B (Eds) (2009). *Ladies and Gents: Public Toilets and Gender* Philadelphia, PA: Temple University Press

- Gosling L., Irvine C., Schechtman L. and Velleman Y. (2012) *Nowhere to go,* Water Aid in Sweden (Accessed on 2 March 2016) www.wateraid.org/se/~/media/Files/Sweden/nowhere-to-go.pdf

- Graham S., Desai R. and McFarlane C. (2013) 'Water Wars in Mumbai', *Public Culture,* 25:1; 115-141

- House s., Ferron S., Sommer M. and Cavill S. (2014). Violence, Gender & WASH: A Practitioner's Toolkit –Making water, sanitation and hygiene safer

through improved programming and services. London, UK: WaterAid/SHARE. (Accessed March 3 2016) http://violence-wash.lboro.ac.uk/toolkit/

- Jagori and UN Women (2011), *Safe Cities Free of Violence Against Women and Girls Initiative: Report of the Baseline Survey Delhi,* (Accessed on 2nd March 2016) http://www.jagori.org/wp-content/uploads/2011/03/Baseline-Survey_layout_for-Print_12_03_2011.pdf

- Kumar Karn S.and Harada H., (2002) 'Field survey on water supply, sanitation and associated health impacts in urban poor communities – a case from Mumbai City, India' *Water Science and Technology,* 46(11); pp 269-275

- Lennon S. (2011) *Fear and Anger: Perceptions of risks related to sexual violence against women linked to water and sanitation in Delhi, India,* Briefing Note, SHARE and Water Aid (Accessed March 2 2016), : http://www.shareresearch.org/LocalResources/VAW_India.pdf

- *Maharashtra Human Development Report* (2009), New Delhi: Oxford University Press http://mhupa.gov.in/writereaddata/Mumbai%20HDR%20Complete.pdf (Accessed on March 2 2016)

- Manju V. (2013), Mumbai safest city in India, solo women travellers say, *The Times of India,* 28th February, (Accessed 18 March 2016) http://timesofindia.indiatimes.com/india/Mumbai-safest-city-in-India-solo-women-travellers-say/articleshow/18719944.cms

- Massey K. (2011), *Insecurity and Shame: Exploration of the impact of the lack of sanitation on women in the slums of Kampala, Uganda,* Briefing Note, SHARE and Water Aid (Accessed March 2 2016), http://r4d.dfid.gov.uk/PDF/Outputs/sanitation/VAW_Uganda.pdf

- McFarlane, C. (2008) 'Sanitation in Mumbai's informal settlements: state, 'slum' and infrastructure.' *Environment and Planning A*., 40 (1). pp. 88-107.

- Ministry of Home Affairs: (2015), *Annual Report 2014-15,* New Delhi: MHA (Accessed on 4th March 2016) http://www.mha.nic.in/sites/upload_files/mha/files/AR%28E%291415.pdf

- Molotch H, Noren L (Eds) (2010) *Toilet: Public Restrooms and the Politics of Sharing* (New York University Press, New York)

- Nique, M. and Smertnik, H (2015) *Mobile for Development Utilities Programme – The Role of Mobile in Improved Sanitation Access*, GSMA.

- Parikh P., Fu K., Parikh H., McRobie A., George G. (2015) Infrastructure provision, gender, and poverty in Indian slums. *World Development*, 66: 468–486.

- Pathak B. (2011) *The Indian Financial System: Markets, Institutions and Services,* Delhi: Pearson

- Phadke S., Ranade S. and Khan S.(2011), *Why Loiter? Women and Risk on Mumbai Streets,* New Delhi: Penguin

- Risbud N. (2003) The case of Mumbai slums, in *Understanding Slums: Case Studies for the Global Report on Human Settlements,* (Accessed 2 March 2016) http://www.ucl.ac.uk/dpu-projects/Global_Report/pdfs/Mumbai.pdf

- Satterthwaite, D., McGranahan G.and Mitlin D. (2005) *Community driven Development for Water and Sanitation in Urban Areas*. London, UK, and Geneva, Switzerland: Human Settlements Programme and Water Supply and Sanitation Collaborative Council

- Serlin D, (2010) "Pissing without pity: disability, gender, and the public toilet", in *Toilet: Public Restrooms and the Politics of Sharing* Eds H Molotch, L Norén (New York University Press, New York) pp 167–185

- *SHARE* (2014), 'Sanitation Vulnerabilities: Women's stresses and struggles for violence-free sanitation', Research Briefing Note, London: London School of Hygiene and Tropical Medicine, (Accessed on March 2 2016) http://www.communityledtotalsanitation.org/sites/communityledtotalsanitation.org/files/Briefingnote_sanitation_vulnerabilities.pdf

- Sharma R. and Bhide A. (2005), World Band Funded Slum Sanitation Programme in Mumbai, *Economic and Political Weekly,* 40(17); 1784-1789

- Skogan W. (1977), Dimensions of the Dark Figure of Unreported Crime, *Crime & Delinquency,* 23:1; 41-50

- Srinivasan R. (2015), 'Lack of Toilets and Violence against Indian Women: Empirical Evidence and Policy Implications', *SSRN,* (Accessed March 2 2016) http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2612052

- Tomlinson R. (2015), 'Scalable community-led slum upgrading: The Indian Alliance and community toilet blocks in Pune and Mumbai', *Habitat International,* 50; 160-168

- UN Water. (2015), '*World Toilet Day: Equality, dignity and the link between gender-based violence and sanitation'*, (Accessed on 2 March 2016) http://www.unwater.org/fileadmin/user_upload/worldtoiletday/docs/World_Toilet_Day_2014.pdf

- UN-HABITAT. (2003). *The Challenge of slums: Global report on human settlements*. London: Earthscan.

- Viswanath K. and Mehrotra S.T. (2007). Shall We Go out? Women's Safety in Public Spaces in Delhi. Economic and political weekly, pp.1542-1548.

- Weisburd D. (2004), What Can Police Do to Reduce Crime, Disorder, and Fear?' *AAAPS,* 593(1); 42-65

- World Bank and WSP (2006) The Mumbai Slum Sanitation Program – Partnering with Slum Communities for Sustainable Sanitation in a Megalopolis. September 2006. (Accessed on 20 March, 2016) http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/01/25/000020953_20070125135506/Rendered/PDF/384560IN0Mumbai0slum01PUBLIC1.pdf

- World Bank. (2009). World development report 2009: *Bombay fights the markets, and more than half of Mumbai's residents live in slums*. Washington, D.C.: World Bank, go.worldbank.org/2H6T74VF10

---

[i] A term specifically used in South Asia to denote sexual harassment of the verbal or physical kind.

[ii] We are aware that both land ownership and ownership of dwellings in slum areas can be hugely contestable.

[iii] These mechanisms are Increasing the Risk; Increasing the Effort; Reducing the Rewards; Reducing Provocation and Removing Excuses

[iv] Wider literature has indicated that unfocused police patrols have a very insignificant impact on crime prevention if undertaken without a specific problem oriented approach (Weisburd 2004)