Original Research Article

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20200455

Sanitation practices among internal migrant population: a cross sectional study

Ashok Kumar*, Rashmi R. Barik

Department of Community Medicine, University College of Medical Sciences, Delhi, India

Received: 08 December 2019 Accepted: 10 January 2020

*Correspondence:

Dr. Ashok Kumar, E-mail: ashuchananiya@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Poor sanitation and hygiene are known to be associated with increased morbidity and mortality. Despite all the global efforts 68% population still lacks the basic sanitation facilities. The internal migrant population is a vulnerable group that even lags behind the general population in basic sanitation. This study was aimed to assess sanitation practices among the internal migrant population.

Methods: This community based cross sectional study was conducted in a rural village of north-west Delhi from June 2019 to November 2019. People migrated from other parts of the country and residing in the study area for minimum last six months, were included in the study. Data were collected using pre-tested, semi-structured, interviewer-administered study tool, and analysed using SPSS 20.0 software.

Results: Two hundred eleven respondents were included in the study. About 88% were using latrine for defecation, out of this 57% were using household sanitary latrines, rest were using community latrines. About 12% were still practicing open defecation. Among those who were using latrine, only about 60% were found regular users. Positive health associated with latrine usage, comfort, privacy, security, presence of latrine in the rented house, quality construction and availability of water were the major motivators and enablers to regular usage of latrine.

Conclusions: The internal migrant population is a vulnerable group, with suboptimal sanitation practices. Along with information education communication and behaviour change communication activities, policymakers need to pay special attention to this group in order to achieve global and national sanitation targets.

Keywords: Latrine, Migrants, Open defecation, Sanitation

INTRODUCTION

Poor sanitation and hygiene are known to be associated with increased morbidity and mortality. It accounts for about 60% of the total diarrheal deaths i.e. 432000.¹ Poor sanitation and hygiene share 1.9% of the global burden of disease.² It is associated with diarrhoea, neglected tropical disease, acute respiratory disease, soil-transmitted helminths such as human roundworm, human whipworm, and human hookworms, stunting, anaemia and other forms of malnutrition in children.³ It also increases the risk of developing hepatitis A, typhoid, cholera, trachoma and schistosomiasis.⁴⁻⁶ Moreover, the lack of access to

adequate sanitation facilities makes young girls and women vulnerable to sexual, mental and bodily trauma. 6,7

Considering the evidence, access to basic sanitation was placed in millennium development goals. Despite 15 years of continuous global efforts, a significant portion (68%) of the global population remained uncovered to basic sanitation facilities (flush latrine or pit latrines). Among 2.3 billion people who lack access to toilets or latrines, 892 million still defecate in the open places.⁸ Of those who still practice open defecation 90% of people reside in three regions; sub-Saharan Africa, Central Asia and Southern Asia.⁸

In 2010, the UN General Assembly declared access to safe and clean drinking water and sanitation as a human right. It urged for international efforts to help countries to provide safe, clean, accessible and affordable drinking water and sanitation.⁹ Consequently, basic sanitation and hygiene have been incorporated in the sustainable development goals (SDG) in target 6.2 aiming to "achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations by 2030".10 The UN calls to eliminate open defecation by 2030.¹⁰

Government of India, also launched 'Swachh Bharat Mission' to address the sanitation and hygiene. One of the objectives of the mission was, 'to end the open defecation by 2nd October 2019.'¹¹ Rural areas of the country were declared open defecation free, but urban areas are still to achieve the milestone.¹² The constrained space, complex demographic pattern, floating population, and internal migration are some of the factors that pose the challenge for cities to achieve open defecation-free status. Policymakers prepared comprehensive plans to address these problems, like provision of community toilets for 20% of the urban population, subsidized household latrines and public toilets for floating population.¹¹

The internal migrant population is still under addressed. Internal migration is a form of mobility in which people change their residential location across defined administrative boundaries within the country for a variety of reasons, which may be involuntary or voluntary, or a mixture of both.¹³ Every year about 9 million people migrate from one part to another in India as per the economic survey of India, 2017.¹⁴ According to census 2011, the total number of internal migrants in the country is 139 million.¹³ Other than the marriage, male-dominated labour in the unorganized sector, better education and health concerns are common drivers of internal migration in India.¹³

Migrants who work in unorganized sector are the most vulnerable among all of these. They often reside in outskirts of the cities, named as slums. Poor income, new location, low literacy, political exploitation leads to the marginalization of these migrants in the decision-making process in the city and exacerbates their vulnerabilities with regard to proper housing, access to improved sources of drinking water, sanitation and health services.¹⁵ Their knowledge and practice of safe sanitation and hygiene practice were found inadequate in a recent communitybased study.¹⁶ Though they are important stakeholders to achieve the national sanitation targets, their sanitation and hygiene practices are still understudied. Therefore, this study aimed to assess the prevalence of latrine usage among the migrant population. This study also aimed to assess the motivators and facilitators to regular usage of latrine among internal migrants.

METHODS

This cross-sectional study was done in Tikri Khurd, a rural village in North West Delhi. Rural villages in Delhi are defined as agriculture land located within extended Lal Dora and given permission for residential purpose under Delhi Master Plan.¹⁷ It is located near Narela, an Industrial area. Migrant workers, who are engaged in different industrial activities used to live in this village due to the comparatively low cost of living.

The study was conducted from June 2019 to November 2019. Whole migrant population residing in the study area was target population. Migration was defined as when a person of origin of other than Delhi was living in the area for a minimum of six months. Migration only from other parts of the country (internal migration) was considered.

After assessing for inclusion criteria, written informed consent was taken. Data were collected using a selfprepared study tool. Any reliable adult person available in the household at the time of the survey was approached for responses. The tool was prepared on the basis of available literature. It was pre-tested and intervieweradministered. It consists of following detailssociodemographic characteristics, place of defecation, the status of handwashing station, cleanliness of latrine, and motivators and enablers of regular usage of the latrine.

Socioeconomic classes were taken as per revised Kuppuswamy scale, using Consumer Price Index-Industrial Worker as 316 (May 2019). Place of defecation was categorized into three parts, i.e., open defecation, community latrine, household sanitary latrine. Open defecation was defined when people use field, open-drain or any other open space for defecation. A community latrine was a shared sanitation facility provided for a group of residents or an entire settlement.¹¹ The household sanitary latrine was defined as flush/pour toilet latrine that is connected to a piped sewer system, septic or other systems.¹¹

Cleanliness of latrine is classified under three heads namely- very clean, clean and dirty. On inspection of toilets, when no excreta were seen outside and inside the pan, it was taken as very clean; when visible excreta particles were found inside the pan, but not outside the pan it was considered clean. Dirty toilets are those with faeces are seen all over the toilet (outside and inside the pan).¹⁸ Hand washing station was defined as the place where adequate handwashing facilities i.e., water supply and soap, were present. It included washing basins with soap and water supply, a simple cemented area with a water tap and soap, and a separate place where soap and water bucket were kept.¹⁸

The study considered two types of factors-motivators and facilitators for regular usage of a latrine. Motivating

factors (and de-motivating factors) were the psychological drivers that caused people to keep or abandon regular usage of a latrine. Facilitating factors (divided into positive 'enablers' and negative 'barriers') are the environmental or physical issues that make it easier or harder to regular usage of latrine.¹⁹ Motivating and facilitating factors were asked from the respondents. After getting a list of the factors, respondents were asked to rank them according to their perceived significance, the factor on the top in this exercise was taken as their response.

Statistical analysis

Data were analysed using SPSS 20.0 software. Categorical variables were presented as proportion. The bivariate analysis was done with chi-square and Fisher Exact tests. All the tests were two-sided, and p value <0.05 was taken as statistically significant. Ethical approval was taken from the Institutional Ethics Committee-Human Research, prior to the start of the study.

RESULTS

Two hundred thirty households were found eligible for the study, out of them nineteen refused to participate in the study. Two hundred eleven households were included in the study. The mean (SD) age of the respondents was 32.2 (12.4) years. About 68% of respondents were female, 77% of households belonged to upper lower, 23% belonged to lower-middle socioeconomic class as per revised Kuppuswamy scale. Majority of them belonged to nuclear family (87.6%), and about 60% of the households had family size up to four. About half of them were living in the study area for more than one year.

About 88% were using latrine for defecation, out of this 57% were using household sanitary latrines, rest were using community latrines. About 12% were still practicing open defecation. When cleanliness was observed, about one fourth of the latrines were found very clean, 43% were found clean, and 30% were found dirty. All the households were assessed for the presence of handwashing station. Only about sixty per cent of households were found with handwashing station (Table 1).

Table 1: Sanitation and handwashing practices.

| Variable | | N | % |
|--------------------------------|---------------------|-----|------|
| Place of defecation (n=211) | Open | 26 | 12.3 |
| | Latrine | 185 | 87.7 |
| | Sanitary HH latrine | 121 | 57.3 |
| | Community latrine | 64 | 30.3 |
| | Very clean | 49 | 26.5 |
| Cleanliness of latrine (n=185) | Clean | 80 | 43.2 |
| | Dirty | 56 | 30.3 |
| Hand washing station $(n-211)$ | Present | 135 | 70.0 |
| Hanu washing station (II=211) | Absent | 76 | 30.0 |

Table 2: Association between latrine usage and socio-demographic characteristics (n=211).

| Variables | | Total | Latrine (%) | Odds ratio (95% CI) | P value |
|----------------------------------|------------------------|------------------|-------------|---------------------|---------|
| Family type | Nuclear | 185 | 162 (87.6) | 0.92 (0.26-3.30) | 1.000\$ |
| | Joint | 26 | 23 (88.5) | | |
| Family size | ≤4 | 127 | 111 (87.4) | 0.94 (0.40-2.18) | 0.881^ |
| | >4 | 84 | 74 (88.1) | | |
| Daniel and finder | ≤1 year | 99 | 82 (82.8) | 0.42 (0.18.0.00) | 0.044^* |
| Duration of stay | >1 year 112 103 (92.0) | 0.42 (0.16-0.99) | 0.044 | | |
| Socioeconomic class [@] | Upper lower | 163 | 138 (84.7) | 0.12 (0.01-0.89) | 0.011* |
| | Lower middle | 48 | 47 (97.9) | | |

\$ - Fisher Exact test, ^- Chi-square test, *-Statistically significant at 0.05 level of significance, @ - as per revised Kuppuswamy scale.

Usage of latrine was found more among those who were staying for less than one year than their counterpart, and among lower middle class than upper lower class. It was not associated with family type and family size (Table 2). Among those who were using latrine, only about 60% were found regular users. Regular users were found more among those who were staying for less than one year than those who were staying for more than one year (Table 3).

Table 4 shows the motivators and facilitators to regular use of household sanitary latrine. Presence of latrine in rented house (40.9%), availability of water (31.0%), health concern (29.5%), convenient to use (23.9%). and clean toilet (22.5%) were found major motivators and enablers to regular usage of household sanitary latrine. Among demotivators and barriers non-availability of water (42%), repair or maintenance concern (34%), need for regular cleaning (30%) and poor construction (28%) were found to regular usage of household sanitary latrines. Table 5 shows motivators and facilitators to regular use of community latrine. Near location (68.2%), health concern (52%), promotional campaigns (25%) and quality construction (18.2%) were found major

motivators and enablers to regular usage of community latrine. Fear or insecurity (45%), non-availability of water (45%) and lack of privacy (35%) were found major demotivators and barriers to regular usage of community latrine.

Table 3: Association between regular use of latrine and sociodemographic characteristics (n=185).

| Variables | | Total | Regular users (%) | Odds ratio (95% CI) | P value [^] |
|--------------------|--------------|-------|-------------------|---------------------|----------------------|
| Total | | 185 | 115 (62.2) | | |
| Family type | Nuclear | 162 | 102 (63.0) | 1.31 (0.54-3.17) | 0.551 |
| | Joint | 23 | 13 (56.5) | | |
| Family size | ≤4 | 111 | 65 (58.6) | 0.68 (0.37-1.26) | 0.216 |
| | >4 | 74 | 50 (67.6) | | |
| Duration of stay | ≤1 year | 82 | 60 (73.2) | 2 29 (1 29 4 44) | 0.006* |
| | >1 year | 103 | 55 (53.4) | 2.38 (1.28-4.44) | |
| Socioeconomic | Upper lower | 138 | 83 (60.1) | - 0.71 (0.25, 1.42) | 0.296 |
| class [@] | Lower middle | 47 | 32 (68.1) | 0.71 (0.33-1.43) | 0.380 |

^- Chi-square test, *-Statistically significant at 0.05 level of significance, @ - as per Revised Kuppuswamy scale.

Table 4: Motivators and facilitators to regular use of sanitary latrine.

| Motivators among regular users (n=71) | Demotivators among irregular users (n=50) |
|---------------------------------------|---|
| Convenient and comfort - 17 (23.9) | Discomfort, inconvenient - 9 (18.0) |
| Privacy - 14 (19.7) | Need of regular cleaning - 15 (30.0) |
| Social/religious norms - 7 (10.0) | Repair, maintenance - 17 (34.0) |
| Health concern - 21 (29.5) | Social, religious norms - 9 (18.0) |
| Promotional campaigns - 12 (16.9) | |
| Enablers among regular users (n=71) | Barriers among irregular users (n=50) |
| Already present - 29 (40.9) | Poor construction - 14 (28.0) |
| Availability of water - 22 (31.0) | Non- availability of water - 21 (42.0) |
| Clean latrine - 16 (22.5) | Extra cost for latrines - 5 (10.0) |
| Support from owner - 4 (5.6) | Extra cost for water - 10 (20.0) |

Table 5: Motivators and facilitators to regular use of community latrine.

| Motivators among regular users (n=44) | Demotivators among irregular users (n=20) |
|---------------------------------------|---|
| Easily accessible - 6 (13.6) | Not easily accessible - 4 (20.0) |
| Privacy - 3 (6.8) | Fear, insecurity - 9 (45.0) |
| Social, religious norms - 1 (2.3) | No privacy - 7 (35.0) |
| Health - 23 (52.3) | |
| Promotional campaign - 11 (25.0) | |
| Enablers among regular users (n=44) | Barriers among irregular users (n=20) |
| Locally available - 30 (68.2) | Far location - 4 (20.0) |
| Water availability - 6 (13.6) | Non- availability of water - 9 (45.0) |
| Quality construction - 8 (18.2) | Poor construction - 4 (20.0) |
| | Poor cleanliness - 3 (15.0) |

DISCUSSION

The study highlighted the gap in sanitation practices among internal migrant population. About twelve percent of the population was still practicing open areas to defecate. Our findings are not consistent with another study done in migrant population in Goa, where open defecation was found only 4%.¹⁶ It may be due to our study area is more densely populated, and due to higher

influx than Goa, and also cost of living is higher in Delhi. However, our findings are consistent with the findings of another study done in the general population.²⁰ It was higher than the global and national open defecation rates in urban general population i.e. 1.5% and 4.8% respectively.²¹

Usage of latrine was found more among those who were staying for more than one year than those who were

staying for less than one year. This may be due to longer stay makes them financially more stable, and more participation in the community. The usage of latrine was also found more among lower middle than upper lower socioeconomic class. This is concordance with another study done in the migrant population.¹⁶ The better education, occupation and income make their decision favorable towards better sanitation practices.

Sanitation doesn't stop only at the construction of latrines. Cleanliness status of the latrine, presence of handwashing stations and regularity in the usage of latrines were found suboptimal in our study. We couldn't find any study to compare cleanliness status of latrines. Hand hygiene practices were also found suboptimal among internal migrants elsewhere in India.¹⁶

Although about 88% population had access to latrine, but only half of the population was found using it regularly. The psychological factors that motivate for regular usage of latrine were found positive health associated with latrine usage, comfort, privacy, security, social or religious norms and promotional campaigns. The major environmental factors that enable to regular use of toilet were found presence of latrine in the house, quality construction and availability of water. Poor construction, non-availability of water and extra cost for water and toilet were barriers to regular usage of sanitary toilets. Other than these motivators and facilitators, among community toilet user's easy accessibility was also found major motivator, and near location was the major enabler to regular usage, while far location, poor quality construction, poor cleanliness and non-availability of water were major barriers to regular use of community toilets. Another study had also reported an association of these factors with the usage of toilets.¹⁹

India has achieved open defecation free status in rural areas, and about to achieve in urban areas. This study highlighted that internal migrant population is lagging behind, we need to address them with more priority. The study also presented the factors that are important for the sustenance of open defecation free status. Policymakers need to consider these factors as well.

CONCLUSION

The internal migrant population is a vulnerable group, with suboptimal sanitation practices. Financial burden, distant location, poor quality latrines and non-availability of the water are the major drivers that push them towards insanitary practices. Along with information education communication and behaviour change communication activities, policymakers need to pay special attention to this group in order to achieve global and national sanitation targets.

Funding: No funding sources Conflict of interest: None declared Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

- 1. WHO. Fact sheets: sanitation, 2019. Available at: https://www.who.int/news-room/fact
 - sheets/detail/sanitation. Assessed on 4 June 2019.
- 2. WHO. Mortality and burden of disease from water and sanitation, 2018. Available at: https://www.who.int/gho/phe/water_sanitation/burde n_text/en/. Assessed on 4 June 2019.
- 3. Mara D, Lane J, Scott B, Trouba D. Sanitation and Health. PLoS Med. 2010;7:e1000363.
- 4. Colley DG, Bustinduy AL, Secor WE, King CH. Human schistosomiasis. Lancet. 2014;383:2253-64.
- 5. Emerson PM, Bailey RL, Walraven GEL, Lindsay SW. Human and other faeces as breeding media of the trachoma vector Musca sorbens. Med Vet Entomol. 2001;15:314-20.
- 6. Saleem M, Burdett T, Heaslip V. Health and social impacts of open defecation on women: a systematic review. BMC Public Health. 2019;19:158.
- Strunz EC, Addiss DG, Stocks ME, Ogden S, Utzinger J, Freeman MC. Water, sanitation, hygiene, and soil-transmitted helminth infection: a systematic review and meta-analysis. Hales S, editor. PLoS Med. 2014;11:e1001620.
- WHO, UNICEF. Progress on drinking water and sanitation - 2017 update, 2017. Available at: https://www.who.int/mediacentre/news/releases/201 7/launch-version-report-jmp-water-sanitationhygiene.pdf. Assessed on 2 June 2019.
- 9. United Nations. Promotion and protection of all Human rights, civil, political, economic, social and cultural rights, including the right to development; report of the independent expert on the issue of human rights obligations related to access to safe drinking water and sanitation, 2009. Available at: https://ap.ohchr.org/documents/alldocs.aspx?doc_id =15861. Assessed on 3 June 2019.
- 10. United Nations Development Programme. Goal 6: Clean water and sanitation, 2015. Available at: https://www.undp.org/content/undp/en/home/sustain able-development-goals/goal-6-clean-water-andsanitation.html. Assessed on 3 June 2019.
- 11. Ministry of Housing and Urban Affairs, Government of India. Guidelines for Swachh Bharat Mission- Urban, 2017. Available at: http://swachhbharaturban.gov.in/writereaddata/SBM _Guideline.pdf?id=qudbhgzqqxrxdrhj. Assessed on June 2019.
- 12. Press Information Bureau, Government of India. PM Narendra Modi Inaugurates Swachh Bharat Diwas, 2019. Available at: https://pib.gov.in/PressRelese Detail.aspx?PRID=1584541. Assessed on 3 November 2019.
- 13. Office of the Registrar General and Census Commissioner, Ministry of Home Affairs, Government of India. Census of India: Migration tables. Available at: http://censusindia.gov.in/ Tables_Published/D-Series/Tables_on_Migration_

Census_of_India_2011.aspx. Assessed on 3 June 2019.

- Ministry of Finance, Government of India. Economic Survey, 2017. Available at: http://mofapp.nic.in:8080/economicsurvey/. Assessed on 3 June 2019.
- Indian Council of Social Science Research. Internal Migration in India Initiative, 2012. Available at: http://www.unesco.org/new/fileadmin/MULTIMED IA/FIELD/New_Delhi/pdf/Internal_Migration_Wor kshop_-_Vol_2_07.pdf. Assessed on 23 June 2019.
- 16. Mendes J, Shah HK. A study of hygiene and sanitation among migrants reporting to a primary health care setting in North Goa. Int J Community Med Public Heal. 2019;6:4111-5.
- 17. Centre for policy research, Delhi. Categorisation of settlement in Delhi, 2015. Available at: https://www.cprindia.org/sites/default/files/policy-briefs/Categorisation-of-Settlement-in-Delhi.pdf. Assessed on 3 June 2019.
- Shrestha S, Ahmad T, Shrestha PK. Sustainability of ODF in Nepal: Transformation towards sustainable and resilient WASH services, 41st WEDC International Conference, Egerton University, Nakuru, Kenya. 2018:1-6. Available at: https://wedc-knowledge.lboro.ac.uk/resources/

conference/41/Shrestha-2874.pdf. Assessed on 9 June 2019.

- Tyndale-Biscoe P, Bond M, Kidd R. ODF sustainability study; 2013. Available at: https://www.communityledtotalsanitation.org/sites/c ommunityledtotalsanitation.org/files/Plan_Internatio nal_ODF_Sustainability_Study.pdf. Assessed on 5 June 2019.
- 20. Anuradha R, Dutta R, Raja JD, Lawrence D, Timsi J, Sivaprakasam P. Role of community in Swachh Bharat Mission: Their Knowledge, attitude and practices of sanitary latrine usage in rural areas, Tamil Nadu. Indian J Community Med. 2017;42:107-10.
- World Bank. Data: People practicing open defecation, urban (% of urban population), 2019. Available at: https://data.worldbank.org/indicator/ SH.STA.ODFC.UR.ZS. Assessed on 5 November 2019.

Cite this article as: Kumar A, Barik RR. Sanitation practices among internal migrant population: a cross sectional study. Int J Community Med Public Health 2020;7:717-22.