

# A study of utilization of sanitary facilities by adolescent girls in an urban slum of Central India

Utsav Raj<sup>1</sup>, Abhiruchi Galhotra<sup>1</sup>, Roja VR<sup>2</sup>

<sup>1</sup>Department of Community and Family Medicine, AIIMS, <sup>2</sup>ICMR NTF HI Project, AIIMS, Raipur, Chhattisgarh, India

## ABSTRACT

**Background:** Hygienic sanitation facilities are crucial for public health. Investment on sanitation brings the single greatest return for any development intervention. Poor sanitation, open defecation and lack of awareness about hygiene have detrimental effect on the health of women and children living in slums. **Objective:** The objective of this study was to perceive/assess the barriers to access of hygienic sanitary facilities for adolescent girls in an urban slum. **Methodology:** This study included 98 adolescent females (10-19years) living in urban slums Ward no 19 Raipur. Simple random sampling by 'note method' was used to select one administrative division of this area. **Result:** Mean age of adolescent girls in the present study was 15.44 ±2.2years (Range: 12 to 19 years) and a majority of them were in High School 60 (60.2%). About half (42%) of the study subjects were living in Semi pucca house and only 38% had access to an independent toilet facility, 9% were practicing open defecation and remaining (51%) were using public toilets. **Conclusion:** The availability of sanitation facility and latrine utilization rate of the households were satisfactory. Privacy is a concern in public toilet, uses of sanitary pad was also less and changing of absorbent material in toilets was also a matter of concern for the girls.

**Keywords:** Adolescent girls, sanitary facilities, SES (socioeconomic status), urban slums

## Introduction

Sanitation refers to provision of facilities and services for the safe disposal of human waste of all types with a view to condition the environment fit for human habitation. Universal access to adequate sanitation is a fundamental human right, and right to sanitation is a fundamental right under Article 21 of Indian constitution.<sup>[1]</sup> Hygienic sanitation facilities are crucial for public health.<sup>[2]</sup> Sanitation brings the single greatest return on investment for any development intervention; as for every US\$1 spent on sanitation, at least US\$9 is saved in health, education, and economic development.<sup>[3]</sup>

The world continues to urbanize and the cities increasingly bear the burden of poor sanitation with an estimated 57%

and 16% of urban dwellers lacking access to toilets and basic sanitation services, respectively, and almost 100 million urban residents practicing open defecation in the midst of challenges of providing many millions of rural households with adequate sanitation.<sup>[4]</sup>

Half of India's population lives in urban areas, a synonym of greater economic development and prosperity; however, the abysmal urban sanitation threatens to undermine such gains.

Poor sanitation, open defecation, and lack of awareness about hygiene have a greater impact on the health of women and children living in slums.<sup>[5-7]</sup> Besides privacy, women need to spend more time in the toilet because they must always sit or squat. Women need to be physically safe when they use outside or public toilets; be it at school, marketplace, or workplace. If WASH (Water Sanitation and Hygiene Facilities) facilities in

**Address for correspondence:** Dr. Abhiruchi Galhotra, Department of CFM, AIIMS, Raipur, Chhattisgarh, India.  
E-mail: abhiruchigalhotra@aiimsraipur.edu.in

### Access this article online

#### Quick Response Code:



**Website:**  
www.jfmpc.com

**DOI:**  
10.4103/jfmpc.jfmpc\_195\_19

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** reprints@medknow.com

**How to cite this article:** Raj U, Galhotra A, Roja VR. A study of utilization of sanitary facilities by adolescent girls in an urban slum of Central India. J Family Med Prim Care 2019;8:1396-400.

schools, workplaces, market spaces, and public areas are poorly maintained, dirty, and unsafe, it will have a cascading effect on women's health. Health risks of women and adolescent girls exacerbate especially when they menstruate; if there are no facilities for changing and disposing sanitary materials safely.

The issue of toilets is more serious in urban areas than rural areas because spaces are cramped and open space is deficient. Women who have no access to toilet facilities routinely withhold food and water, which subsequently leads to dehydration, discomfort, fear of incontinence, and at worst urinary tract infections (UTIs).<sup>[8,9]</sup>

In urban poor environments, living conditions are often crowded and unsanitary, social relations can be fraught with tension over making ends meet, and parents are often faced with the challenge of upholding cultural values and practices in the face of a rapidly changing social and economic environment. Hence, adolescence, especially for girls, can be a difficult time.<sup>[10]</sup>

The links between sanitation and human health are well documented. The Government of India vide Swachh Bharat Mission is trying to clean up the streets, roads, and infrastructure of Indian cities. However, there is no program which directly addresses the barriers and problems faced by adolescent girls with respect to sanitation. In the state of Chhattisgarh, according to National Family Health Survey 4, sanitation facilities improved to 32.7% (in urban 64.4% and rural 22.6%) over a decade; however, around 35% of the households living in slums defecate in the open and are vulnerable to various health risks.<sup>[11]</sup>

Raipur, the capital city of Chhattisgarh, is regarded as one of the major economic growth centers in the country with rapid urbanization and industrialization. The population of the city increased drastically, especially the slum population increased to 516,829 (2011) from 97,264 (1991). This growth has led to an increase in the demand for water and better sanitation facilities. More than 35% of the households living in slums defecate in the open and are exposed to various health hazards. This is more so for womenfolk and the girls who go for nature call after evening sets in or during night hours.<sup>[10]</sup>

## Materials and Methods

This community-based cross-sectional study was designed to assess the barriers to the access of hygienic sanitary facilities for adolescent girls in an urban slum of Raipur city. Protocol approval was taken from the Institutional Ethics Committee, AIIMS, Raipur, vide no. AIIMSRPR/IEC/2018/213. Ward no. 19 (the location of urban field practice area of Department of Community & Family Medicine, AIIMS, Raipur) is a notified slum and has eight administrative divisions. Simple random sampling by "note method" was used to select one administrative division of this area. Complete enumeration of adolescent females (10–19 years) living in the selected area (107) was done and a list of the same was prepared. Written informed consent was obtained from all the study participants. Of 107 adolescent

girls enumerated, 98 consented for the study. A predesigned, pretested, and validated proforma was used to collect the appropriate information by one-to-one interview of each of the adolescent girls so enumerated.

Simultaneously, sensitization regarding personal hygiene and menstrual hygiene for these girls was also carried out by the investigators. The data collected were numerically coded in SPSS v. 25 and were summarized using descriptive statistics, frequencies, and percentages.

## Results

Of the 98 girls interviewed; 61.2% (60 in number) belonged to 15–19 years age group. The mean age and standard deviation of the study group was  $15.44 \pm 2.2$  years. All belonged to Hindu religion. About 9.2% (9) were working and 10.2% (10) were married. Approximately 86% of adolescent girls were between the age of 15 and 19 years in a similar study done by Sharanya.<sup>[12]</sup>

In this study, a majority of the adolescent girls were in high school (60.2%), and more than half (60%) of the subjects belonged to class 5 socioeconomic status, according to BG Prasad classification [Table 1]. About half (42%) of the study subjects were living in semi-pucca house, 35.9% of them were living in kacha house, and 21.4% were living in pucca house. This is in consensus with a similar slum report of Chhattisgarh done in February 2014,<sup>[10]</sup> which states that 43.14% of slum dwellers in Raipur live in pucca houses, and 33.19% and 23.68% in semi-pucca and kaccha houses, respectively. Whereas when compared with a similar study by Oljira and Berkessa,<sup>[13]</sup> in Southwest Ethiopia these results were lower.

Only 38 of 98 surveyed adolescent girls had access to independent toilet facility [Figure 1], 9 were practising open defecation, and the

**Table 1: Demographic variables**

Demographic variables	No. (%) n=98
Age in years	
10-14	38 (38.8)
15-19	60 (61.2)
Education	
Graduate	3 (3.1)
High school	60 (60.2)
Illiterate	4 (4.1)
Primary	20 (20.4)
Intermediate	11 (11.2)
Household type	
Kacha	35 (35.7)
Pacca	21 (21.4)
Semi-pacca	42 (42.9)
Family type	
Joint	25 (25.5)
Nuclear	71 (71.4)
Three gen	2 (2.0)

remaining 51 were using public toilets. Slum report 2014 Raipur stated that more than 35% of the households living in slums defecated in the open.<sup>[10]</sup> The results were lower when compared with a similar study done by Oljira and Berkessa<sup>[13]</sup> where 88.2% of the population had independent access to the toilet.

Of 89 using the toilets, 64.3% were using septic tank type of toilet. A similar study by Bhar *et al.*<sup>[14]</sup> found that two-thirds of the households (65.7%) used improved sanitation facilities, of which 47.5% had flush/pour flush facility and 18.2% used improved pit latrine. More than a third household (34.3%) used unimproved sanitation facilities; 27.2% used shared latrines and 2.6% used pit latrine without slabs. Bora *et al.*<sup>[15]</sup> in their study found that sanitation facilities were available in 58.9% of households, of which 83.1% were sanitary type and 69.7% latrines were functional. About 61.1% of the respondents used latrine regularly, while 64.1% practiced open-air defecation.

Among independent toilet users (38), a majority [25 (65.8%)] had access to piped water supply in their house; whereas among public toilet users (51), less than half of 21 (41.2) had access to pipe water supply [Table 2]. The distance of independent toilet users (38) was within 100 m from their house in a majority of them [37 (97%)]. Whereas among public toilet users (51), the distance was 200–300 m in a majority [35 (68%)] of the study subjects [Table 3]. Of 51 public toilet users, few of them (13.7%) were scared to go alone. Of 38 independent toilet users, a majority of them used when they wanted [yes 34 (89.5)], and few (10.5%) said they had to wait because of joint family. About 64.7% (51) of the public toilet users had to wait for using the toilet facility and avoiding the use in evening and night. Dustbin was absent in all the independent toilet users; even in public toilets (51), a majority did not have dustbin [38 (74.5%)].

Public toilet users complained about lack of privacy [29 (56.9%)] while using toilets; 7 (13.7%) and 4 (7.8%), respectively, complained of hygiene and bad smell while using it.

About 66% of the public toilet users complained about guys gathering around the toilets, and 25% reported that they were abused while using toilets.

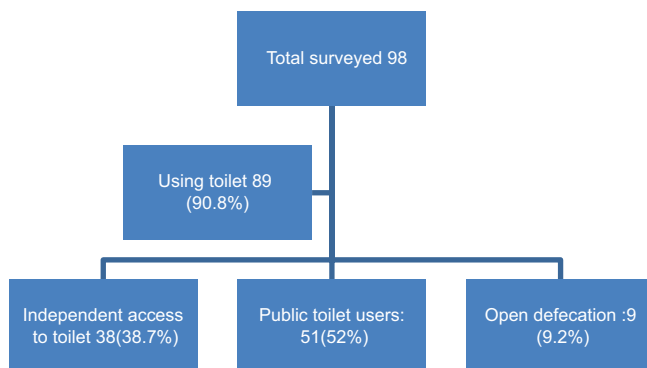


Figure 1: Distribution of toilet user in urban slums

Half of adolescent girls were using absorbent material as cloth [49 (50%)] and another half were using sanitary pad [49 (50%)] during menstruation [Table 4], which was very low when compared with a study carried out by Dasgupta and Sarkar<sup>[16]</sup> where only 18 (11.25%) girls used sanitary pads during menstruation. Both types of toilet users faced the problem in changing the absorbent materials. A majority of the adolescent girls were using toilet during menstruation, 31 (81.5%) independent toilet user and 45 (88.2%) public toilet users; only few girls (18.4% and 13.7%, respectively) from both the groups were not using it because of cultural practice.

In our study, 14.6% of reason cited for not using was because of cultural practice which was low when compared with the

Table 2: Modality of toilet and its use

Variables	Independent (n=38) toilet users	Public toilet users (n=51)
Main source of water supply		
Pipe water	25 (65.8)	0
Dug well water	3 (7.9)	21 (41.2)
Tank water	10 (26.3)	16 (31.4)
Bucket water from outside tank	0	14 (27.5)
Frequency of toilet cleaning		
Daily	13 (34.2)	31 (60.8)
Once in week	12 (31.6)	18 (35.3)
Biweekly	13 (34.2)	2 (3.9)
Cleaning agent used for cleaning the toilet		
Acid	27 (71.1)	32 (62.7)
Detergent	0	3 (5.9)
Brush	7 (18.4)	10 (19.6)
Don't know	4 (10.5)	6 (11.8)
Distance of the toilet from house		
Less than 100 m	37 (97.4)	35 (68.6)
200-300 m	1 (2.6)	16 (31.4)
More than 500 m	0	0
Go to toilet when you want to go		
Yes	34 (89.5)	18 (35.3)
No	4 (10.5)	33 (64.7)
Dustbin to dispose sanitary napkins		
Yes	0	13 (25.5)
No	38 (100)	38 (74.5)

Table 3: Problem associated with public toilet users

Variables for public toilet users, n=51	Yes	No
Approach road to the toilet	28 (54.9)	23 (45.1)
Light present on approach road to the toilet	38 (74.5)	13 (25.5)
Pot holes present on the approach road to the toilet	37 (72.5)	14 (27.5)
Guys gather around the toilet	34 (66)	17 (34)
Pay to use toilet	51	0
Problem using toilet	39 (76.5)	12 (23.5)
Privacy while using it (n=39)	29 (56.9)	NA
Hygiene (n=39)	7 (13.7)	
Bad smell (n=39)	4 (8.8)	
Go alone to the toilet	44 (86.3)	7 (13.7)

**Table 4: Utilization of sanitary facilities**

	Independent, n=38	Public toilet users, n=51
1 Difficulties in changing absorbent material		
Yes	14 (36.8)	38 (74.5)
No	24 (63.2)	13 (25.5)
2 Toilet using during menstruation	Independent, n=38	Public toilet users, n=51
Yes	31 (81.5)	45 (88.2)
No (cultural practice)	7 (18.4)	7 (13.7)

finding by Dasgupta and Sarkar<sup>[16]</sup> where 136 (85%) girls practised different restrictions during menstruation.

Common diseases suffered by independent toilet users (38) were UTI [8 (21.1%)]; whereas out of 51 public toilet users, 26 (51%) suffered diseases in the past: UTI–10 (19.6%) and PID–15 (16.4%).

## Discussion

Basic sanitation facilities are human rights. With the rapid increase in urban population, provision of accessible, affordable, and acceptable safe sanitation facility in urban slums and bridging the utilization gap between slums and non-slums are a challenge.

In urban poor environments, living conditions are often crowded and unsanitary, social relations can be fraught with tension over making ends meet, and parents are often faced with the challenge of upholding cultural values and practices in the face of a rapidly changing social and economic environment. Hence, adolescence, especially for girls, can be a difficult time.<sup>[17]</sup>

This study found a diverse pattern of sanitation practices in the slums of Raipur city. Our study documented the availability and use of sanitary facilities by adolescent girls in an urban slum. It was found that independent toilets were better maintained when compared with public toilets. Open defecation was present in 9% of study respondents. Piped water supply was lacking in public toilets. Cleaning of toilet was done on biweekly basis by a majority of independent toilet users, whereas cleaning was done on daily basis in public toilets.

It is well-known that sanitary facilities for each household, that is, individual toilets, when constructed, used and maintained, and cleaned properly, are the ideal solution from a public health point of view. However, it may be practically impossible for households living in slums to have their own toilets for a variety of reasons including uncertain tenure, lack of space, and/or affordability constraints.

Problems identified to be associated with public toilet users were unsatisfactory approach roads, inadequate lightening on approach road, and guys gathering around the toilets. Also, the problems of privacy, hygiene, and foul smell inside the toilets. A dirty toilet means an invitation to various diseases, multiple use of public toilets by multiple people affect their toileting patterns and consequently their use of public spaces;

this is more so for women and girls who are physiologically vulnerable.

A key priority for women and girls is to have necessary knowledge, facilities, and cultural environment to manage menstruation hygienically, and with dignity Menstrual Hygiene Management (MHM) is an integral part of the *Swachh Bharat Mission Guidelines*.

It says adequate water and space inside the toilet should be ensured for women to change napkins/cloth and to wash themselves. Toilet cubicles may be provided with a shelf, hooks, or niche to keep clothing and menstrual adsorbents dry. Disposal bins with lids should be placed within the toilet, as the initial point of waste collection. Even after 4 years, capital city like Raipur lacks dustbin inside public toilets.

Primary care physicians are not just concerned with curative care, but health promotion is also an important core area in their practise. It is a known fact that poor access to clean water and sanitation is associated with greater mortality, and adolescent girls are the most vulnerable age group in the life cycle as they are the building blocks of our future generation. The knowledge about barriers in accessing hygienic sanitary facilities by adolescent girls in an urban slum will provide an insight into the etiology of common diseases associated with it and thereby help prescribe the primary care physicians a long-term preventive and promotive strategy.

## Conclusion and Recommendations

The availability of sanitation facility and latrine utilization rate of the households were satisfactory. This reflects that various schemes related to sanitation that are planned and implemented by the government have started reaching the slums of Raipur. In this study, we found that a majority of the adolescent girls were in high school and not working (90.8%). About half of the study subjects were living in semi-pucca house. Half of the study subjects used public toilets and need to wait long because of the less number of toilets and large number of population. It is noteworthy that the practice of open defecation was found to be lower than the national average. This study reveals that lack of privacy is a concern in public toilet, use of sanitary pad was also less, and changing of absorbent material in toilets was also a matter of concern for girls. Restriction was less among all the girls on using toilet during menstruation. Dustbin was not available in any toilet for proper disposal of sanitary pad which is also a matter of concern. Menstrual hygiene should be promoted. Also, ignorance, misconceptions, and unsafe practices regarding menstruation which are the root cause of many problems should be further stressed upon. Dustbins with proper lids should be placed in the toilets. Encouraging adolescent girls to practice safe and hygienic behavior is the need of the hour. Appropriate emphasis needs to be given to behavior change communication to create awareness among adolescents on the importance of hygienic and safe sanitation practices.

## Limitations

Only one administrative division of a slum was taken.

## Ethical Clearance

Vide no. AIIMS RPR/IEC/2018/213.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Virender Gaur V. State of Haryana, Supreme Court of India (1995) 2 SCC 577, Bench: K. Ramaswamy, N. Venkatachala. Available from: <https://indiankanoon.org/doc/27930439/>.
2. Sanitation WHO; 19 February 2018. Available from: <http://www.who.int/en/news-room/fact-sheets/detail/sanitation>© 2018 WHO.
3. Dasra. Squatting Rights: The Importance of Urban Sanitation in India. Avpn Asia. Available from: <https://avpn.asia/2015/01/07/sSquatting-rights-the-importance-of-urban-sanitation-in-india/> [Last accessed on 2016 Nov 17].
4. The World Bank Group/Sanitation @ 2018, All Rights Reserved. Available from: <http://www.worldbank.org/en/topic/sanitation>.
5. Cheng JJ, Schuster-Wallace CJ, Watt S, Newbold BK, Mente A. An ecological quantification of the relationships between water, sanitation and infant, child, and maternal mortality. *Environ Health* 2012;11:4.
6. Mudey A, Kesharwani N, Mudey G, Goyal R. A cross-sectional study on awareness regarding safe and hygienic practices amongst school going adolescent girls in rural area of Wardha district, India. *Glob J Health Sci* 2010;2:225-31.
7. Fisher J. For Her It's the Big Issue: Putting Women at the Centre of Water Supply, Sanitation and Hygiene; 2006.
8. Hulland KR, Chase RP, Caruso BA, Swain R, Biswal B, Sahoo KC, *et al.* Sanitation, stress, and life stage: A systematic data collection study among women in Odisha, India. *PLoS One* 2015;10:e0141883.
9. Swachta Status Report 2016 Ministry of Statistics and Programme Implementation Government of India. Available from: [http://mospi.nic.in/sites/default/files/publication\\_reports/Swachhta\\_Status\\_Report%202016\\_17apr17.pdf](http://mospi.nic.in/sites/default/files/publication_reports/Swachhta_Status_Report%202016_17apr17.pdf). [Last accessed on 2018 Aug 09].
10. Study\_raipur.pdf Report on Status of Slums in Raipur, Chhattisgarh; February 2014. Available from: <http://www.indiawaterportal.org/articles/will-rs-392-crore-fund-help-raipurs-growing-slums>.
11. Ministry of Health and Family Welfare, National Family Health Survey-4 2015-16, State Fact Sheet Chhattisgarh. Available from: [http://rchiips.org/NFHS/pdf/NFHS4/CT\\_FactSheet.pdf](http://rchiips.org/NFHS/pdf/NFHS4/CT_FactSheet.pdf).
12. Sharanya T. Reproductive health status and life skills of adolescent girls dwelling in slums in Chennai, India. *Natl Med J India* 2014;27:305-10.
13. Oljira D, Berkessa TS. Latrine use and determinant factors in Southwest Ethiopia. *J Epidemiol Public Health Rev* 2016;1. doi: 10.16966/2471-8211.133.
14. Bhar D, Bhattacharjee S, Mukherjee A, Sarkar TK, Dasgupta S. Utilization of safe drinking water and sanitary facilities in slum households of Siliguri, West Bengal. *Indian J Public Health* 2017;61:248-53.
15. Bora PJ, Das BR, Das N. Availability and utilization of sanitation facilities amongst the tea garden population of Jorhat district, Assam. *Int J Community Med Public Health* 2018;5:2506-11.
16. Dasgupta A, Sarkar M. Menstrual hygiene: How hygiene is the adolescent girl? *Indian J Community Med* 2008;33:77-80.
17. "THE PINK TOILET" a document by National Commission for Protection of Child Rights, Government of India. Available from: <http://ncpcr.gov.in>. [Last accessed on 2018 Aug 03].