Open Peer Review on Qeios



Women In Slum Risking Their Safety To Access And Usage Of Basic Water And Sanitation Facilities

Ayush Hazare¹, Jyoti Jain Tholiya¹

1 Marathwada Mitramandal's College of Architecture (MMCOA)

Funding: No specific funding was received for this work. Potential competing interests: No potential competing interests to declare

Abstract

The paper focuses on the safety of women in slums in accessing sanitation facilities. Various factors affect the safety of women while accessing or using sanitation facilities in slums. These factors are related to the infrastructure of toilet blocks, the location of the toilet, the route to the toilet, timings of toilet use, and the number of toilets. Most of the women face sexual abuse or rape while visiting or using toilets or due to open defecation. The study found that most cases of violence or crime against women are due to a lack of lighting in and on the route to access sanitation and water facilities, lack of access to the toilet block, as well as the dangerous location of PTs (Public Toilets) and CTCs (Common toilet complexes). This paper is an attempt to solve problems related to women's safety while accessing or using basic water sanitation facilities.

Keywords: Safety, Women, Slum, Access, Water, Sanitation.

1. Introduction

The UN operationally defines a slum as "one or a group of individuals living under the same roof in an urban area, lacking in one or more of the following five amenities": 1) Durable housing (a permanent structure providing protection from extreme climatic conditions); 2) Sufficient living area (no more than three people sharing a room); 3) Access to improved water (water that is sufficient, affordable, and can be obtained without extreme effort); 4) Access to improved sanitation facilities (a private toilet, or a public one shared with a reasonable number of people); and 5) Secure tenure (Rev., 2015). In developing nations, urbanization leads to the establishment of slums, which are typified by environmental deterioration, a lack of access to clean water and sanitation, expensive electricity, and outdated housing stock (Belur, Parikh, Daruwalla, Joshi, & Fernandes, 2016). Sanitation denotes the access to and use of amenities and facilities for the safe disposal of human feces and urine. The United Nations General Assembly officially recognized that access to clean water and sanitation are critical to the realization of all other basic human rights (Tembo, 2022). Despite repeated attempts over the past several decades to reduce the number of people lacking access to adequate sanitation around the world, 2.3 billion people still live without basic sanitation facilities like toilets or latrines (Winter, Barchi, & Dzombo, 2018). Women who don't have access to water or toilets in their houses are potentially more vulnerable to sexual assault when they go to and from PTs (Public Toilets). Due to a lack of facilities, women are sometimes forced to defecate in the open because there are no other options. The definition of sanitation can be broadened to encompass tasks like fetching water for sanitation activities, bathing, changing, and managing menstruation in order to gain a comprehensive picture of women's vulnerability with regard to sanitation-related activities (Banka, Joshi, & Kale, 2021). Women are expected to shoulder a lot of responsibility, and because of the pressure to satisfy both family and personal needs, they are forced to accept dangerous circumstances and endure assault and abuse (Gowtham, 2020). The unavailability, accessing conditions, and locations of toilets are the factors that lead to violence against women and girls living in slums (Gowtham, 2020). In the case of PTs (Public Toilets), they may serve as crime generators if they are not strategically placed and correctly structured to prevent gender-based crimes like eye teasing, assault, and rape (Belur, Parikh, Daruwalla, Joshi, & Fernandes, 2016). PTs are viewed as the best choice for managing slum sanitation, but unless they are well-planned, they bring gendered dangers for women and children (Kulkarni, O'Reilly, & Bhat, 2017). Other reasons for violence against women with reference to sanitation and water facilities are poverty, lack of education as well as knowledge, old cultural beliefs, lack of personal space, specifically poor or inadequate lighting in public toilets gives rise to feelings of insecurity and fear of being attacked. Inadequate toilet locations and dangerous routes to public facilities, as well as poor upkeep, encourage crimes against women. Some examples include broken windows and doors, missing locks, insufficient lighting, difficult bathroom accessibility, and a lack of guardianship (Belur, Parikh, Daruwalla, Joshi, & Fernandes, 2016). Due to such factors, women have had to resort to open defecation (OD). OD is the practice of defecating in open spaces that lack sanitation facilities (Banka, Joshi, & Kale, 2021). OD is a compulsion, not a choice, and creates specific risks and imposes a variety of harms upon women and children that men and boys do not suffer (Kalita, 2017). Fear of rape, especially at night, can lead to women not drinking fluids, experiencing chronic constipation, and using a bucket in their home as a toilet (Hildebrand, 2015). Moreover, the impact of abuse, violence, and harassment affects women and girls in many ways, not only physically but also mentally and psychologically. Women "discipline their bodies" and restrict their food and drink intake in order to visit the toilet less frequently out of fear of harassment at public defecation places. According to the report, many of these women experienced urinary tract infections and required hospitalization as a result. According to other studies, such punishment might cause persistent constipation, diarrhea, increased rates of maternal mortality, and worsened menstrual and pregnancy symptoms (Banka, Joshi, & Kale, 2021). Poor sanitation is associated with transmission of several communicable

diseases, including cholera, diarrhea, dysentery, and typhoid, as well as neglected tropical diseases such as schistosomiasis and trachoma (Winter, Barchi, & Dzombo, 2018). As a result of sexual and other gender-based violence, women and children are at risk of contracting HIV/AIDS. Infected women experience more discrimination than men do as a result of the stigma associated with HIV/AIDS (International, 2010). To overcome such problems of harassment and violence against women living in slums to access and use basic water and sanitation, the implementation of policies that are easy to apply and will directly contribute to ending practices of OD in slums and informal settlements is necessary. The gravity of this issue demands increased attention and action as a vital element of the global effort to provide sanitation for all (Massey, 2011).

2. Literature Review

The relationship between a lack of access to water and sanitary services and sexual assault against women remains underexplored and has not received enough attention to date. Women bear the brunt of inadequate sanitation services in cities, particularly in informal settlements, often referred to as slums, which are impoverished urban neighborhoods. Inadequate sanitation is a major source of insecurity and indignity for women and girls (Hildebrand, 2015). The lack of toilets and bathrooms near their homes, especially after dark, puts women at significant risk of violence, including rape. People living in slums are subjected to a life devoid of dignity and are not protected from human rights violations. Inadequate water and sanitation facilities have been identified as potential influencing factors for this (Gowtham, 2020). Sometimes, women resort to washing their clothes or using the toilet in groups, or they ask male family members for accompaniment at night. However, this does not change the fact that the facilities are substandard and inaccessible. Many unmarried women who run households alone are unable to reach out to male relatives for help (International, 2010). Along with other domestic duties, women bear the primary responsibility for providing water for the household. Even though water facilities have improved, they still do not meet all the needs of slum dwellers. Most women are forced to rely on public restrooms that are inadequate and difficult to use due to a lack of personal water connections and toilet facilities at home. These deficiencies and limited access put women at risk of experiencing verbal, physical, and sexual abuse (International, 2010). Despite an expansion in public water infrastructure, slum dwellers struggle daily, enduring both mental and physical discomfort, to fill their water containers. Women often wait for long periods, resort to shouting, fighting, and behaving aggressively to fill their 'allotted' canisters, and experience verbal, physical, and sexual violence. The use of facilities exposes them to foul and abusive language, which disturbs their mental health and sometimes leads to violent attacks. The same women who mistreat others also become victims when they are fighting for water. In addition to being assaulted by other women, men have also been known to commit acts of violence against women, most often verbal abuse that has occasionally escalated to sexual abuse. Women are often dissuaded from using the few available latrines in their communities due to a combination of distaste for the current state of the facilities, prohibitive costs, and fear of illness or violence. There was widespread use of so-called "home toilets"-buckets or plastic bags used within the home as toilets. However, this method came with its own set of problems, primarily a profound sense of shame (Massey, 2011). The use of a 'home toilet' was universally condemned, but there appeared to be no other viable options as women encountered the seemingly insurmountable hurdles of high cost, lack of cleanliness, and threat of personal harm associated with communal latrines (Massey, 2011). In coastal slums, women face a high rate of sexual assault when using the restrooms. The lack of public restrooms forces women in coastal slums to walk long distances in search of secluded spots or to urinate in open areas along the beach. This situation increases their vulnerability to strangers or abusers and is a major contributing factor to the high incidence of sexual violence in these areas. Interactions with unfamiliar males can heighten anxiety for the woman and her entire family. Women in resettlement colonies face significantly less violence while accessing water and sanitation services than in slums, thanks to built-in toilets and water points close to their homes (Gowtham, 2020). An urban sanitation policy solely based on technical solutions will not ensure access to modern sanitation for everyone. Beyond technical and infrastructural challenges, unequal social dynamics, such as gender inequality and its intersections with other forms of inequality like religion and caste, also contribute to discrimination and inequality. These factors result in diverse experiences with sanitation. Some literature on gender and sanitation acknowledges identity-based discrimination against women due to their religion or caste, as well as prohibitive costs and bans on women using facilities at the whim of attendants (Kulkarn, O'Reilly, & Bhat, 2017). Open defecation (OD) sites increase risk and susceptibility for women as they are often located far from their homes and have additional risk-increasing characteristics. These sites are typically situated in scrubland, undergrowth-filled woodlands, along canals and railway tracks, as well as on hillsides and erosion gullies. OD sites are generally poorly lit, if at all. Regarding the issue of violence, women reported little trust in the willingness of the police to protect them from attackers or to take incidences of assault and rape seriously. The perceived unlikelihood of a fellow community member coming to the rescue of a woman under attack was also discussed (Massey, 2011). Other factors, including privacy, cost of toilets/inability to pay, cultural rules (e.g., 'it is a must'), and accessibility (e.g., hours of operation, proximity, and temporary closures) also emerged as considerations for women. For instance, the inability to pay emerged as a common factor for women who regularly chose to use bags, buckets, or open defecation during the day. This factor did not emerge for women who reported regularly using plot, building, or private facilities. These findings suggest that the inability to pay could influence women's sanitation practices (e.g., women opt to use bags, buckets, or open defecation - free options - when they lack the money to go to a public toilet). However, it may also suggest the opposite relationship (e.g., having access to sanitation alternatives other than public toilets, such as plot, building, or private toilets, eliminates the need to pay to urinate/defecate) (Winter, Barchi, & Dzombo, 2018).

3. Methodology

The current paper is a review of previous research papers and the methods used in addressing women's safety in slums while using water and basic sanitation facilities. The papers that were reviewed included diverse slums, from coastal slums to industrial slums, from various parts of the world. The total sample size studied through the literature was 6663 (number of people in slum households). Based on the papers reviewed, 12 indicators were finalized, and the related causes were identified. Through the papers reviewed, Table 1 was prepared, which highlighted the leading indicators for violence against women while accessing basic sanitation and water facilities in different slum locations. The literature that was reviewed presented various effects on women, taking into consideration the indicators as shown in Table 2.

Various crimes against women while accessing and using sanitation and water facilities were identified, and the leading indicators were determined by studying various slums; the primary causes of violence were identified.

Table 1. Location, Sample Size, and Indicators for various forms of violence against women while accessing basic sanitation and water facilities. (Source: Authors)

LOCATION	Bhalswa and Sunder Nagri and Semapuri (North East district of Delhi)	Mathare is a collection of slums in Nairobi, Kenya	Nehru Nagar	Mukuru	Mangolpuria	Chennai City (A total of nine slums and two resettlement colonies were included)	Slum communities of Jambula, Kiganda and Kifumbira in Kampala, Uganda	Kathputli, Kalakar, and Lal Khanand Swamion ki Basti in Jaipur, Rajasthan; Ambedkar Nagar, Khadda Vasti, Birasdar Nagar, Gosavi Vasti, Laxmi Nagar, Lokamanya Nagar, Ganesh Nagar, Samartha Nagar, Rajiv Ghandi Nagar, Gulab Nagar, and Jaibhim Nagar	39 slums in 4 cities- Kolhapur, Pimpri- Chinchwad, Navi Mumbai and Thane	Mathare Valley Informal Settlement (Mathare) in Nairobi, Kenya.	Kanyama compound, Lusaka - Zambia	Total
SAMPLE SIZE	N=42	N=65	N=142	N=77	N=31	N=550	N=32	N=112	N=5531	N=55	N=26	N=6663
INDICATORS												
Insufficient lighting lighting	1	I	I	I	I						I	6
Lack of access to the Toilets	1	I		I		I					I	5
Dangerous location of toilet	I		I	I	I							4
Poor Infrastructure /Lack of Infrastructure in toilets		I				I	I					3
Insufficient timings to use toilets						I	1					2
High Cost for using Public toilets							1					1
Caste Related discrimination								1				I
Lack of Space for toilets											I	1
Lack of safety of toilet and surroundings of toilets			I		I				I		I	4
Lack of action taken by police				I								1
Less number of toilets							I					1
Lack of water in PT's								I				1

Table 2. Effects and Indicators for various forms of violence against women while accessing basic sanitation and water facilities. (Source: Authors)

EFFECTS	Sexual Abuse/Violence	Verbal Violence	Physical violence	Fear	Shame	Rape	Stress
INDICATORS							
Insufficient lighting lighting	Ш	I		I.		I.	L
Lack of access to the Toilets	П						
Dangerous location of toilet	11111	II	I	I			
Poor Infrastructure /Lack of Infrastructure in toilets	ш	II	I	I	I		
Insufficient timings to use toilets	Ш	П	I				
High Cost for using Public toilets	L			I.	I.		
Caste Related discrimination	L	I.					
Lack of safety of toilet and surroundings of toilets	Ш	I		I		I	I
Lack of action taken by police	L						
Less number of toilets	Ш			I	1		
Lack of water in PT's	I	I					
TOTAL	27	10	2	6	3	2	2

4. Data Analysis



Figure 1. Percentage of various forms of Violence against women with respect to the indicators. (Source: Authors)

Through the literature review of the studied slums, the percentages of various forms of violence against women were determined, as shown in Figure 1. Sexual abuse is one of the leading crimes against women, and the driving cause for it is the lack of access to toilets as well as the lack of action taken by the police. Moreover, the second most significant cause is verbal violence, which women face due to a lack of water in public toilets, causing them to resort to open defecation at locations where men are loitering. This issue is compounded by caste discrimination, which is also a leading cause for verbal violence; women of a higher caste often verbally abuse women of a lower caste. Other effects of crime include physical violence, fear, shame, rape, and stress. The causes or indicators for these issues are insufficient lighting, lack of access to toilets, dangerous toilet locations, poor or lacking toilet infrastructure, insufficient toilet usage times, high costs for using public toilets, caste-related discrimination, lack of safety in and around toilets, lack of police action, a limited number of toilets, and a lack of water in public toilets.

5. Results and Discussion

The lack of access to and usage of water and basic sanitation is a problem faced by women living in slums all around the world. Moreover, access to sanitation and water are basic human rights, regardless of gender. There are many factors that affect the safety of women while accessing or using sanitation and water facilities, some of which are:

5.1. Poor Toilet Infrastructure – Some women claimed that the lack of privacy in public restrooms led them to use bags, buckets, or open defecation instead of going to the restroom. They stated that "those toilets are made with iron sheets; so, you can see me if I am there inside. People walk by" (Winter, Barchi, & Dzombo, 2018). As shown in images 2A and 2B, women demonstrate how men can peep due to the lack of a roof and the presence of peepholes, leading to harassment and shame (Tembo, 2022). Many slum areas have community toilet complexes (CTCs) which often lack water access and are connected to septic tanks with the promise of future sewer connections. This rarely happens, as the politicians who gained favor by having them built may no longer be there to help the community, ensure water tankers arrive, or ensure the toilets are cleaned and tanks emptied. Due to overcrowding caused by an insufficient number of seats for the number of residents, and because septic tanks are more prone to clogs than those connected to sewage lines, the CTCs soon become filthy and unsanitary. As a result, women and girls often have little choice but to resume using risky areas for open defecation (OD) (Kalita, 2017). The lack of a bin for sanitary pads in the current CTC design contributes directly to their uncleanliness.



Image 1. Lack of privacy due to infrastructure (Source: Amnesty International)



Image 2. 2A: Woman demonstrating how people peep inside her toilet, 2B: A toilet without roof and peepholes on doors. (Source- K Tembo)

5.2. Lack of Illumination or Lights in the Toilets as well as along the Access Path- Poor or insufficient lighting in public toilets can make people feel uneasy and fearful of being attacked. Insufficient lighting was considered a source of insecurity and a catalyst for crime. According to a systematic review, well-lit neighborhoods reduced property crimes like theft and burglary, but had no effect on violent crimes (Belur, Parikh, Daruwalla, Joshi, & Fernandes, 2016).

5.3. Lack of Security – Whether it be open defecation (OD) sites, community toilet complexes (CTCs), public toilets (PTs) or community toilets (CTs), the security of women is a significant concern. Women often have to find someone to accompany them to the toilet, which wastes a considerable amount of their time. The location of the toilets plays a major role in women's security; in some cases, there were liquor shops around the toilet which compromised women's safety. The OD sites are more prone to lack of safety as men often loiter around these areas, impacting women's safety. Lack of police interest also hampers women's safety and allows offenders to go unpunished. Sometimes, caretakers demand money from the visitors, which impacts the economic condition of women.

5.4. Lack of Access to Water and Sanitation Facilities- Many women claimed to use toilets in their homes or buildings frequently, while a few claimed to use public restrooms, at least during the day, simply because they were "nearby." However, some women stated that the lack of accessible restrooms in their neighborhood prevented them from using a toilet at all (Winter, Barchi, & Dzombo, 2018). Those with access to a private or private-shared restroom acknowledged that women, including themselves, would occasionally use buckets or bags inside the home out of fear of being attacked (Winter, Barchi, & Dzombo, 2018). Women often try to avoid going to public toilets due to unhygienic or inadequate routes to the toilet, as shown in Image 3. Moreover, the routes to the toilet are also unsafe, as depicted in Image 4, which shows a map produced by women of the Bhalswa slums.



Image 3. Improper /Unhygienic routes to toilet block in slums of Kampala, Uganda (Source - WaterAid/Benedicte Desrus)



Image 4. Translated copy of map produced by women from Bhalswa slum (Source -Water Aid /Jon Spaull)

5.5. Improper Public Toilet Timings – In many slums, public toilets are closed at night. Women in the sample reported that their regular restrooms were closed or locked at night, and several others stated that the gates to their residences were also shut at that time, preventing them from leaving to use the restroom (Winter, Barchi, & Dzombo, 2018). They often faced brief closures due to blockages, which prevented them from accessing their restrooms whenever they needed, even during the day. When the toilets became temporarily unusable, such as during blockages, it took time to reopen them, forcing women to resort to bags, buckets, or open defecation. Temporary closures, like blockages, frequently influenced women's sanitation habits, leading them to use a different toilet nearby, within the building, or on the plot, or to return to using bags or buckets.

5.6. High Cost of Toilet Visits – Lack of money was a primary factor that led women in slums to avoid using toilets, instead resorting to bags, buckets, or open defecation. Most women stated that while they could afford a fee to use a public restroom during the day to urinate, they could not afford to do so consistently. Even paying to use a public toilet to urinate often proved too expensive for a number of the female participants in the sample (Winter, Barchi, & Dzombo, 2018).

5.7. Dangerous Locations of OD Sites – To avoid going outside at night, most of the women in the study reported using open defecation areas near their homes or bags or buckets within their homes. Most female respondents claimed that their return to using bags, buckets, or open defecation was primarily driven by fear of being attacked or "bad things" happening if they ventured outside

at night. Due to this fear, women often defecated in nearby OD sites or used "flying toilets" or buckets, as shown in Image 1. The OD sites are more vulnerable to assault and harassment, as men hide, throw stones at women from behind bushes, verbally abuse them, and make offensive comments while women are defecating. This leads to a lot of fear, embarrassment, and can sometimes escalate to sexual violence. Men loitering or gambling around OD sites induces a lot of fear in women, but often there are no alternatives to OD sites.



Image 5. Use of plastic bags, buckets, or open defecation common practise by Women in Mathare (Source - Samantha Winter, Francis Barchi & Millicent Ningoma Dzombo



Image 6. Existing CTC in Kusumpur Pahari (Source - Susan E Chaplin and Reetika Kalita)

5.8. Lack of Policies and Improper Planning and Designing of Toilets- Governments often favor communal and public restrooms as solutions to provide sanitation in slums, as they are less expensive, easier to implement in terms of constructing drainage lines and overseeing construction, and have fewer disadvantages. However, they do not address gender-specific issues, which persist in open defecation sites but with less strain on government resources (Winter, Barchi, & Dzombo, 2018). There is a lack of political will at all levels of the Indian state to develop, construct, and systematically maintain sanitation infrastructure. In the case of Community Toilet Complexes (CTCs), inadequate regular cleaning, maintenance, and water supply, as well as the failure of urban local bodies and agencies to take responsibility for designing toilets that cater to women's biological and sociocultural requirements, frequently render them unfit for use. This happens because government sanitation policies have not been based on financing the development and maintenance of the entire sanitation service chain, which includes toilets, access pits, septic tanks, sewers that transport waste across cities, waste treatment facilities, and disposal and reuse systems (Kalita, 2017). Current toilet designs do not address two key needs of women and girls: biological needs and socio-cultural concerns. "Gender-responsive facilities are those which not only serve the physical requirements of women and men, but ones which consider the social norms regulating intimate needs and translate these into sanitation architecture which factors in the spatial situation, accounts for gender-specific constraints with respect to mobility and exposure and offers more than one function (i.e., urinating/defecating)" (Kalita, 2017). An example of improper planning is shown in Image 2 of the existing CTC in Kusumpur Pahari. One can see why current designs do not satisfy women's need for privacy with doors that only reach about head height. Note that the caretaker

6. Conclusion



Women living in slums are often deprived of their fundamental human rights to access and use basic water and sanitation facilities. The papers reviewed in this study highlighted the problems faced by women in slums around the world concerning sanitation. Each paper underscored the factors that render women vulnerable to violence, harassment, and sexual abuse in relation to sanitation and water facilities. The papers also critiqued the insufficiency and lack of planning in government policies. While toilets are constructed, there is often inadequate sanitation, hazardous locations, or the toilet itself becomes a site of crime. Many women are left with no choice but to resort to open defecation sites or use "flying toilets" (buckets or bags), as illustrated in Image 5. The impact of sexual abuse, violence, and sexual harassment greatly affects women, not only physically but also psychologically. This paper aims to spotlight issues related to women's sanitation and safety, drawing attention to the problems faced by women and the correlation between poor sanitation and water facilities and sexual violence against women living in slums.

7. Suggestions

In accordance with the literature reviewed, there is an urgent need to address women's water and sanitation problems and propose suggestions and solutions. The government's strategies for slum sanitation and water facilities lack consideration for the location of public and community toilet complexes and the examination of gender as a factor in policy construction (Kalita, 2017). Therefore, sanitation policymakers, researchers, and developers might need to broaden their understanding of the types of interventions and policies that may yield the best results for access to and utilization of sanitation in informal settlements, particularly for women (Winter, Barchi, & Dzombo, 2018). Local community involvement in the provision, supervision, and evaluation of water and sanitation services is essential (Lennon, 2011). Additionally, as men predominantly make decisions and formulate policies, there is a pressing need for women to serve as decision-makers, implement policies, and oversee their execution in the areas of water and sanitation (Lennon, 2011). Proper and sufficient lighting should be ensured in and around sanitation facilities. Lighting not only enhances visibility but also signifies investment in the community, fostering community pride and informal social control, and sending the message that the area is under the guardianship of civic authorities (Belur, Parikh, Daruwalla, Joshi, & Fernandes, 2016). Well-lit neighborhoods have been found to reduce property crimes as well as violent crimes, and specifically assaults against women in public places such as toilets (Belur, Parikh, Daruwalla, Joshi, & Fernandes, 2016).

The authorities, including police chiefs, should be encouraged to take sexual assaults seriously to deter potential offenders (Lennon, 2011). The most effective strategies have been found to focus on both improving toilet security and enhancing toilet guardianship, either through increased police presence, vigilant community action programs, or the provision of suitable caretakers provided by private entities. Women should be afforded access to loans or financing to install household toilets, given their frequent direct influence on household decision-making (Kalita, 2017). The fees for Community Toilet Complexes (CTCs) should be reduced or made flexible. The practice of issuing monthly passes for household members with unlimited visits should be considered over charging fees for single visits (Kalita, 2017). Toilets need to have an adequate water supply, as well as improved infrastructure features such as trash cans for discarding sanitary napkins, to help protect women from violence and sexual harassment. The construction of CTCs or public toilets (PTs) alone is not sufficient; they also need to be well-maintained, with local people involved in overseeing their upkeep. The operating hours of CTCs and PTs should be extended to accommodate women's schedules and needs. Toilets for men and women should be separated to enhance privacy and should be situated in easily accessible locations for women. Non-Governmental Organizations (NGOs) and local communities should be encouraged to use community mobilization strategies to map, monitor, and evaluate water and sanitation services. This will allow service users to hold service providers accountable (Lennon, 2011).

Abbreviations

Abbreviation	Meaning
OD	Open Defecation
СТС	Common Toilet Complex
PT	Public Toilet
CT	Common Toilet

Conflict of Interest statement

No Conflict of Interest.

Funding statement

No funding

Acknowledgements

I would like to express my sincere gratitude to the anonymous reviewers for their valuable guidance and encouragement. Their keen and relentless attention helped me reach the conclusion of my literature review paper. I would also like to express my gratitude towards my parents, Archana and Prakash Hazare, for their constant support. I am thankful to the scholars and researchers who worked diligently on such topics, which provided a base for my contribution to the vast body of research. My heart goes out to all those women who have been victims of sexual abuse or harassment. I would like to encapsulate the research in a poem written by me.

Women are humans, Accessing sanitation is their basics rights. Sanitation is a basic need, Whether women are living in slums, Or livina in city liahts.

Walking to sanitation are their basic human rights. Fights are there for sanitation, Leaders are ignorant, Towards women fighting and crying There are problems. Which are needed to be solved Policies are there, but not designed. Gender is ignored while policies are awarded. Public toilets are mess, With dirty faces. Toilets are there. But safety is not Rapes are happening, but policies are still. Women you need to stand, Make place at the table, You will some time fumble as well as stumble. If there is no seat at the policy making table, Make your own table and make this nation stable. Make goddess Hygieia proud, And fight for hygiene, cleanliness and a loud. Good sanitation is a need of every nation. There is no time to whine. Standup and fight against crime Women sanitation safety is problem, Leading to harassment, violence, rape, and crime making women defamed My review paper has claimed. – By Ayush Prakash Hazare

About the Authors

First Author: Ayush Prakash Hazare Fourth Year B.Arch Student, Marathwada Mitramandal's College of Architecture (MMCOA), 302/A, Deccan Gymkhana, Pune - 411004, Maharashtra, India Email: ayushhazare46@gmail.com

BIO

Ayush Prakash Hazare is a fourth-year Architecture Student from Marathwada Mitramandal's College of Architecture (MMCOA), Pune, Maharashtra. He has worked on research papers based on Social Science with a keen interest in humanities. He has also published an article in IIA. Has also worked on a slum Rehabilitation Paper. Presented Research at zonal-level Architecture research competitions. His research has helped to draw the attention of local bodies towards the problem faced by the citizens. He has a research interest in slum rehabilitation, urban planning, and housing. Along with studying Ayush has been working with an NGO as a teacher for slum kids which helped him to understand slum in detail. Being an author, he has also published research-oriented poems in magazines.



Second Author: Dr. Jyoti Jain Tholiya

Associate Professor, Marathwada Mitramandal's College of Architecture (MMCOA), 302/A, Deccan Gymkhana, Pune 411004, Maharashtra, India

Email: Jyoti.tholiya@gmail.com

BIO

Dr. Jyoti Jain Tholiya is an Associate Professor at Marathwada Mitra Mandal's College of Architecture, Pune, India. She has over 17 years of professional and teaching experience working in the USA and India in the field of Geographical Information Sciences, Urban Planning, and Architecture. She earned her Ph.D. in Geospatial Sciences from Symbiosis International University, Pune, MH, India (2022), her master's degree in Geography (2007) from Arizona State University, Tempe, AZ, USA, another master's in urban development planning (2004), and Bachelor of Architecture (2002) from Maulana Azad National Institute of Technology, Bhopal, MP, India.



Her research focuses on Geospatial modeling, Spatial Data Sciences, Urban water sustainability, and Urban resilience. She has authored numerous research articles in various peer-reviewed Journals and presented at various National and International conferences, workshops, and seminars. She has also been active in providing GIS consultancy services including Urban, Rural, and Slum communities.

References

- Banka, M., Joshi, P., & Kale, S. (2021). Addressing Women's Sanitation-related Safety Concerns in Slums of Maharashtra, India. wH2O: The Journal of Gender and Water. Retrieved February 18, 2023, from https://repository.upenn.edu/cgi/viewcontent.cgi?article=1088&context=wh2ojournal
- Belur, D. J., Parikh, P., Daruwalla, D., Joshi, D., & Fernandes, R. (2016). Perceptions of gender-based violence around public toilets in Mumbai slums. International Journal of Urban Sustainable Development, 31. Retrieved February 12, 2023, from https://doi.org/10.1080/01924036.2016.1240094
- Gowtham, M. S. (2020). Violence on Accessing Water and Sanitation Facilities A Study among Women in Slums/Resettlement Colonies of Chennai City. International Journal of Social Sciences. Retrieved February 17, 2023, from https://ndpublisher.in/admin/issues/JJSSv9n3f.pdf
- Hildebrand, J. C. (2015). Slum Sanitation and the Social Determinants of Women's Health in Nairobi, Kenya. Journal of Environmental and Public Health. Retrieved February 14, 2023, from https://doi.org/10.1155/2015/209505
- Amnesty International. (2010). Risking Rape to Reach a Toilet: Women's Experiences in the Slums of Nairobi, Kenya. Amnesty International. Retrieved February 18, 2023, from https://www.amnesty.org/en/documents/afr32/006/2010/en/
- Kalita, S. E. (2017). Infrastructure, Gender and Violence: Women and Slum Sanitation Inequalities in Delhi. Centre for Policy Research. Retrieved February 20, 2023, from https://www.google.com/url?sa=i&url=

https%3A%2F%2Fcprindia.org%2Fbriefsreports%2Finfrastructure-gender-and-violence-women-and-slum-sanitation-inequalities-in-

- Kulkarni, S., O'Reilly, K., & Bhat, S. (2017). No relief: lived experiences of inadequate sanitation access of poor urban women in India. Gender & Development, 167-183. Retrieved February 12, 2023, from

https://www.bing.com/ck/a?!&&p=cfa1048f10db7a83JmltdHM9MTY3OTA5NzYwMCZpZ3VpZD0xOWYxMjlhNS01NThkLTYzZmQtMGI5My0zYjBINTQzZjYyMDImaW5zaWQ9NTE3OA&ptn=3&hsh=3 558d-63fd-0b93_

<u>3b0e543f6202&psq=No+relief%3a+lived+experiences+of+inadequate+sanitation+access+of+poor+urban+women+in+India&u=a1aHR0cHM6Ly93d3cudGFuZGZvbmxpbmUuY29tL2RvaS9mdWxsLz</u> • Lennon, S. (2011). Fear and anger: Perceptions of risks related to sexual violence against women linked to water and sanitation in Delhi, India. Violence and WASH. Retrieved February 18, 2023,

from https://violence-wash.lboro.ac.uk/vgw/Supporting-documents/VGW-1-Case-studies-Violence-and-WASH/Lennon-Fear-anger-India-WaterAid-2011.pdf

- Massey, K. (2011). Insecurity and shame: Exploration of the impact of the lack of sanitation on women in the slums of Kampala, Uganda. Gender and Environment. Retrieved February 16, 2023, from https://genderandenvironment.org/insecurity-and-shame-exploration-of-the-impact-of-the-lack-of-sanitation-on-women-in-the-slums-of-kampala-uganda/
- Rev., P. D. (2015). Slum Definitions in Urban India: Implications for the Measurement of Health Inequalities. Population and Development Review. Retrieved February 16, 2023, from https://genderandenvironment.org/insecurity-and-shame-exploration-of-the-impact-of-the-lack-of-sanitation-on-women-in-the-slums-of-kampala-uganda/
- Tembo, K. (2022). Exploring the relationship between gender-based violence and sanitation in urban slums: The case of Kanyama compound, Lusaka Zambia. IHE Delft Institute for Water Education, Delft, the Netherlands, 1-132. Retrieved February 15, 2023, from https://www.narcis.nl/publication/Record/ID/oai:cdm21063.contentdm.oclc.org:masters2%2F124718
- Winter, S., Barchi, F., & Dzombo, M. N. (2018). Drivers of women's sanitation practices in informal settlements in sub-Saharan Africa: a qualitative study in Mathare Valley, Kenya. International Journal of Environmental Health Research. Retrieved February 15, 2023, from https://www.narcis.nl/publication/RecordID/oai:cdm21063.contentdm.oclc.org:masters2%2F124718