

# EXPLORING THE SOCIAL AND ENVIRONMENTAL FACTORS INFLUENCING HYGIENE PRACTICES IN AN URBAN SLUM LUCKNOW

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**Abstract**– This study investigates the social and environmental factors influencing hygiene practices among residents of urban slums in Lucknow, India, where cultural beliefs, socioeconomic status, and environmental conditions significantly impact hygiene. A cross-sectional survey of 100 participants aged 18 and above from four slums revealed significant gender disparity, with males dominating the sample. Alarming, only 22% of participants practice proper hand hygiene, while 32% engage in open defecation. Furthermore, 40% lack access to water for good hygiene, 55% cannot afford good hygiene practices, and 22% are unaware of the importance of handwashing. These findings highlight significant gaps in hygiene practices and access to resources, emphasizing the need to address these gaps to reduce the risk of waterborne diseases and promote public health in these communities.

## INTRODUCTION

India's vast population of approximately 1.4 billion faces significant sanitation challenges, with around six hundred million individuals lacking access to basic toilet facilities. The majority of these individuals reside in urban slums and rural areas, where inadequate sanitation infrastructure persists. In rural areas, a substantial proportion of the population continues to practice open defecation, while slum dwellers in major cities are often forced to live in squalid conditions, without access to even basic amenities like toilets and running water. Despite progress in other areas, India still struggles to keep pace with other nations in terms of providing adequate sanitation facilities for its citizens (Unicef India, 2019). India's urban landscape is plagued by chronic issues, including overcrowding, congestion, and inadequate facilities for managing human waste, wastewater, and solid waste (Pandve, 2008). Despite ambitious targets, such as the 11th five-year plan's goal of achieving universal coverage of urban water, sewerage, and rural sanitation by 2012, significant challenges persist. For instance, a staggering 72% of Indians

lack access to improved sanitation facilities, while 63% of the urban population lacks proper sanitation (Kumar *et al.*, 2021). Moreover, most cities fail to provide adequate waste disposal and sewage treatment facilities, resulting in the indiscriminate dumping of waste in waterways and urban fringes. Furthermore, the quality and long-term sustainability of water supply and sanitation systems remain unaddressed, despite increased investment in the 11<sup>th</sup> plan. Achieving universal public health relies on a foundational step: sanitation. In the mid-19<sup>th</sup> century, public health discourse emerged with a focus on the "sanitation phase," emphasizing environmental factors like housing, workplace conditions, safe drinking water, and waste management. This initial push for public health was driven by concerns for economic productivity and social cohesion among the working poor and other societal segments. Over the past 150 years, industrializing nations have invested heavily in health-protecting infrastructure and services, enacting regulations and legislation to safeguard the industrial workforce, control river pollution, and ensure proper sewage and drainage systems. Today, sanitation remains a crucial precursor to public

health, with continued investment in these areas essential for preventing illness and promoting well-being. In nineteenth-century England, progressive thinkers and politicians advocated for public policy interventions to prevent ill health, driven by economic considerations. They emphasized environmental change during the sanitation phase of the public health movement, which led to a significant reduction in infectious diseases like diphtheria, tuberculosis, and cholera. In contrast, India's public health system has long been inadequate, with sanitation receiving scant attention from policymakers until the late twentieth century. Although Sulabh International's initiative made a notable impact, it faced numerous limitations and systemic barriers that prevented it from being scaled up into a government-led mission. To address this, the Government of India launched the Swachh Bharat Mission in October 2014, aiming to accelerate efforts towards universal sanitation coverage and prioritize sanitation (Kumar and Sivasankar, 2021). To address India's sanitation challenges, it's crucial to integrate sanitation into the healthcare system and development agenda. Understanding the sociology of health and sanitation can provide valuable insights into the country's sanitation landscape. This knowledge can help explain the persistence of open defecation practices, which contribute to the prevalence of diseases, inadequate sanitation infrastructure, and poor hygiene. India's rapid population growth and limited water access exacerbate the issue, leaving nearly 50% of the population without access to proper sanitation facilities, resulting in environmental pollution and diarrhea-related deaths in children. Research reveals that only a slight majority of Indians wash their hands after defecating, while fewer than 40% do so before eating, and just 30% before handling food. Handwashing with soap can significantly reduce the risk of illness, but nearly 600 million people lack access to toilets, increasing the risk of water contamination and diarrhea. Moreover, providing adolescent girls with necessary facilities, products, and education for proper menstrual hygiene is vital, as lack of privacy in sanitation facilities deters many girls from attending school, and females often experience discomfort without access to a bathroom at home (Dopheide *et al.*, 2019). Objective of this study is to investigate the social and environmental factors that affect hygiene practices among residents of Urban Slum Lucknow, with a focus on understanding the challenges and complexities

faced by the community.

## MATERIALS AND METHODS

This cross-sectional study was conducted in Lucknow, India, with a focus on four urban poor slums: Rajajipuram, Indira Nagar, Aminabad, and Chowk. These slums were conveniently selected based on their proximity to the research team and the cooperation received from the community. A total of 100 participants, aged 18 years and above, were selected from the four slums using stratified random sampling. This ensured equal representation from each slum area, allowing for a more diverse and representative sample. Participants were included if they were residents of the urban poor slum and provided informed consent. Those with mental or physical challenges that would make it difficult to participate in the study were excluded.

### Data collection involved a multi-faceted approach

**Focus Group Discussions (FGDs):** Ten groups of five participants each were conducted to validate and triangulate the data collected through interviews. FGDs allowed for in-depth exploration of participants' experiences and perceptions.

**Participant Observations:** Researchers conducted observations in the slum areas to gain insights into the physical environment and hygiene practices. This helped to contextualize the data and identify patterns and trends.

**Survey Questionnaire:** A survey questionnaire was administered to the 100 participants, collecting data on: Demographic information (age, gender, education level, etc.) Hygiene practices (handwashing, sanitation, etc.) and Perceived barriers to good hygiene (lack of access to water, cultural beliefs, etc.)

### Operational definitions

1. Age (years): Participant's age in completed years.
2. Gender (Male/Female): Participant's biological sex.
3. Handwashing Frequency: How often participants wash their hands with soap and water.
4. Sanitation Facility Use: Whether participants use a toilet or latrine for defecation.
5. Lack of Access to Water: Participant's level of agreement with the statement "I don't have enough access to water for good hygiene."
6. Cost or Affordability: Participant's level of

agreement with the statement “I cannot afford to practice good hygiene.”

7. Understanding of Handwashing Importance: Whether participants understand the importance of handwashing in preventing illness.

**Ethical Approval**

The present study was approved by Institutional Ethics Committee. Written informed consent was obtained from each participant before the study.

**Statistical analysis**

Data entry and analysis was performed using Microsoft Excel. Qualitative information of participants was presented using descriptive statistics such as number, percentage and appropriate graphs.

**RESULTS**

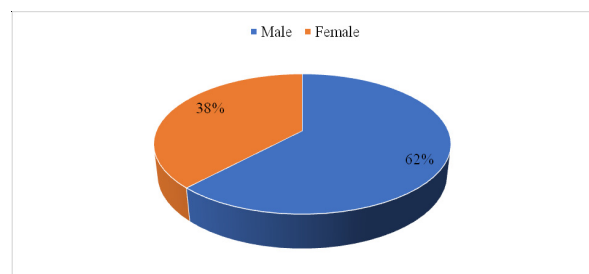
In Table 1, the majority of participants (25) are between 18-24 years old, indicating a relatively young population. The second-largest group (30) is between 25-34 years old, suggesting a significant proportion of adults in their prime working age. The smallest group (11) is 55 years or older, indicating a relatively small elderly population.

Figure 1 illustrates that the males (62) outnumber females (38), indicating a gender imbalance in the study population.

Table 2 shows that the frequency distribution of participants, how often wash their hands with soap

**Table 1.** Frequency distribution of Participant’s age in completed years

Age Group	n (%)
18-24	25 (25.0%)
25-34	30 (30.0%)
35-44	20 (20.0%)
45-54	14(14.0%)



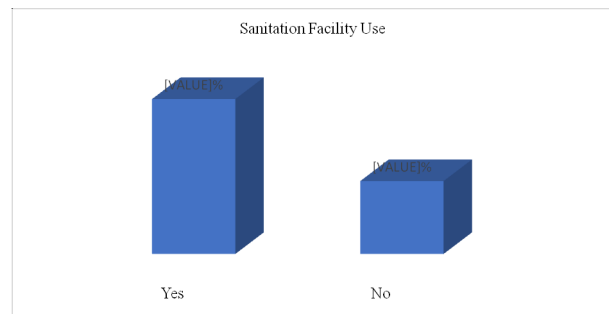
**Fig. 1.** Frequency distribution of Participant’s Gender (Male/Female)

**Table 2.** Frequency distribution of participants wash their hands with soap and water.

Handwashing Frequency	n(%)
Never	10
Rarely	19
Sometimes	31
Often	18
Always	22

and water. In which, only 22% of participants wash their hands “Always” with soap and water, indicating a significant gap in proper hand hygiene practices. A combined 50% of participants wash their hands “Sometimes” or “Rarely”, suggesting a need for improved hand washing habits. However, 10% of participants “Never” wash their hands, indicating a critical need for education and intervention.

Figure 2 depicts that the majority (68%) of participants use a toilet or latrine for defecation, indicating some access to basic sanitation facilities. However, 32% of participants do not use a toilet or latrine, suggesting a significant proportion may be practicing open defecation.

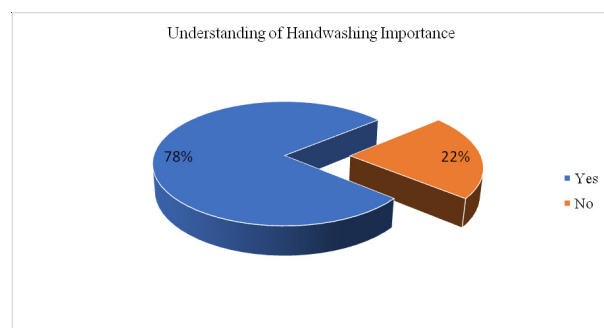


**Fig. 2.** Sanitation Facility Use: Participants use a toilet for defecation.

Table 3 shows that the, combined 40% of participants either “Somewhat Agree” or “Strongly Agree” that they lack access to water for good hygiene, indicating a significant water scarcity issue. Twenty-five percentage of participants are neutral, suggesting some uncertainty or variability in access to water. And 35% of participants disagree, indicating some access to water, but potentially not sufficient for good hygiene. A total 55% of participants either “Somewhat Agree” or “Strongly Agree” that they cannot afford to practice good hygiene, indicating a significant economic barrier. Twenty percentage of participants are neutral, suggesting some uncertainty or variability in

**Table 3.** Frequency distribution of participant's level of agreement for access to Water and afford to practice good hygiene.

Participant's level of agreement	Lack of Access to Water	Cost/afford to practice good hygiene
Strongly Disagree	17	13
Somewhat Disagree	18	12
Neither Agree nor Disagree	25	20
Somewhat Agree	19	23
Strongly Agree	21	32



**Fig. 3.** Frequency distribution of participants understanding of Handwashing Importance

affordability and 25% of participants disagree, indicating some ability to afford good hygiene practices.

Figure 3 shows that the majority (78%) of participants understand the importance of handwashing in preventing illness, indicating some level of knowledge and awareness. However, 22% of participants do not understand the importance of hand washing, suggesting a need for education and awareness campaigns.

## DISCUSSION

People living in urban slums experience poverty, nutritional deprivation especially among women and children, low education, hazardous occupation, low-quality housing, unclean water supply, unregulated waste disposal, and the lack of open and safe recreational spaces, thereby adversely impacting their health (Nejad *et al.*, 2021; Mote *et al.*, 2016). These populations also experience a significantly higher burden of communicable diseases and undernutrition compared to affluent populations (Anand *et al.*, 2007; Murarkar *et al.*, 2020). Furthermore, a combination of unhealthy diets, lack of avenues for regular exercise, and stressful social environments render the people

living in the slums at high risk of noncommunicable diseases (NCDs) including cardiovascular, diabetes, and hypertension (Lumagbas *et al.*, 2018, Yadav and Krishnan, 2008). Handwashing Frequency in present study reported only 22% of participants wash their hands "Always" with soap and water, indicating a significant gap in proper hand hygiene practices. A combined 50% of participants wash their hands "Sometimes" or "Rarely", suggesting a need for improved hand washing habits. 10% of participants "Never" wash their hands, indicating a critical need for education and intervention. The finding on hand washing frequency highlights a significant gap in proper hand hygiene practices, which is consistent with the Centers for Disease Control and Prevention (CDC's) recommendations and guidelines. Only 22% of participants wash their hands "Always" with soap and water, which is lower than the CDC's recommendation to wash hands frequently and consistently, especially during critical moments such as after using the toilet, before eating, and after blowing your nose, coughing or sneezing. Total of 50% of participants wash their hands "Sometimes" or "Rarely", which suggests a need for improved hand washing habits, aligning with the CDC's guidance on hand washing in communities to save lives. Ten percent of participants "Never" wash their hands, indicating a critical need for education and intervention, which is supported by the CDC's emphasis on hand hygiene in healthcare settings to prevent healthcare-associated infections. Overall, the findings suggest that there is a significant gap in proper hand hygiene practices, and education and intervention are necessary to improve hand washing habits and prevent illnesses stated by Centers for Disease Control and Prevention (2022). In the present study, the majority (68%) of participants use a toilet or latrine for defecation, indicating some access to basic sanitation facilities. The majority of participants (68%) use a toilet or latrine for defecation, indicating some access to basic sanitation facilities. However, 32% of participants do not use a toilet or latrine, suggesting a significant proportion may be practicing open defecation. The World Health Organization (WHO) and UNICEF have reported that nearly one third of schools around the world still lack basic water, sanitation and hygiene services. (Centers for Disease Control and Prevention, 2022, Population using improved sanitation facilities, 2024). In present study, forty percent of participants either "Somewhat Agree" or "Strongly Agree" that they lack access to water for

good hygiene, indicating a significant water scarcity issue. Furthermore, WHO estimates that half of the world's population lacks access to safe drinking water, sanitation and hygiene (WASH), leading to 1.4 million deaths and 74 million disability-adjusted life years in 2019. The WHO also states that safe drinking water, sanitation and hygiene are crucial to human health and well-being, and that drinking unsafe water impairs health through illnesses such as diarrhea (WHO, 2024, Water, sanitation and hygiene (WASH), 2024). The finding that 55% of participants face economic barriers to practicing good hygiene is consistent with several studies that have highlighted the cost of hygiene products as a significant obstacle to good hygiene. A published study found that "financial constraints" were a major barrier to hand washing with soap. Additionally, cost was also a significant factor in determining access to hygiene facilities. In the present study, the neutral 20% may face economic uncertainty, affecting their ability to afford good hygiene practices, as financial stress and income uncertainty are linked to poorer hygiene. In contrast, the 25% who disagree and claim to afford good hygiene may have greater economic security and access to resources supporting their health and well-being. This is consistent with a study that higher socioeconomic status was associated with better hygiene practices (WASH, 2021, Woode *et al.*, 2018). The present study reported that approximately eighty percent of participants understand the importance of hand washing in preventing illness, indicating some level of knowledge and awareness. Furthermore, the CDC has reported that hand washing with soap and water can reduce the number of people who get sick with diarrhea by 23-40% and reduce respiratory infections by 16-21%. The CDC 2023 reported that also reports that hand washing is one of the best ways to remove germs, avoid getting sick and prevent the spread of germs to others.

### CONCLUSION

In conclusion, this study highlights the significance of addressing economic barriers and knowledge gaps in promoting good hygiene practices. While a majority of participants demonstrate an understanding of the importance of hand washing in preventing illness, a notable proportion lack this knowledge, emphasizing the need for targeted education and awareness campaigns. Furthermore,

the finding that more than fifty percent of participants face economic barriers to practicing good hygiene underscores the importance of addressing affordability and accessibility of hygiene products and facilities. To improve public health outcomes, it is crucial to develop and implement strategies that address these dual challenges, ensuring that all individuals have the knowledge and resources necessary to maintain good hygiene practices.

**Conflict of Interest-** None

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