



# Understanding the Knowledge and Practices of Hand Hygiene in Schools of Rural Bihar

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## Abstract:

*This study examines the knowledge and practices related to hand hygiene among adolescent girls in rural schools of Khudabandpur Block, Begusarai District, Bihar. Data was collected through in-depth interviews and focused group discussions with 279 adolescent girls (aged 10-19) and interviews with teachers and school administrators in four selected schools. The findings reveal that a significant proportion of students wash hands with water alone 82.4 per cent, while only 35.5 per cent use soap and water. Knowledge of proper handwashing techniques is limited, with 21.1 per cent of students demonstrating only slight awareness. Moreover, handwashing practices before eating and after using the toilet are inconsistent. Barriers include a lack of awareness, inadequate access to soap and water, and behavioural factors. The study underscores the need for prioritised awareness campaigns, particularly about handwashing techniques, improved access to handwashing facilities, and the integration of hygiene education into the school curriculum to improve hand hygiene practices and prevent disease transmission.*

**Keywords:** Handwashing, Hand hygiene, School, Knowledge and Practices

## 1. Introduction

The Joint Monitoring Programme, jointly conducted by Unicef and the World Health Organization, defines hand hygiene as the practice of washing hands with soap and water at a dedicated handwashing facility (WHO, 2021). Handwashing with soap and water is one of the most cost-effective strategies for reducing the transmission of diseases and has been recognised as a top priority for hygiene monitoring. However, access to hand hygiene facilities remains inadequate, particularly in areas where they are most needed. Nearly half of all schools globally do not have handwashing facilities with soap and water, affecting 900 million school-age children. Direct observation of handwashing behavior is challenging; school surveys increasingly include a module in which the surveyor's visits to check the handwashing facility and observes if water and soap are present. Hand hygiene has a significant impact on education, especially in low-resource settings. According to a joint report of Unicef & WHO (2021), in 2019, 57 per cent of schools worldwide had a basic hygiene service (handwashing facilities and soap and water), 19 per cent had a limited service (handwashing facilities with water but no soap available), and 25 per cent had no service (no facilities or no water at all). This means that in 2019, 818 million children were without basic hygiene service at school, with 462 million children who attended schools had no hygiene service at all.

Hand hygiene in India plays a critical role in improving public health, reducing disease burden, and promoting overall well-being. Despite progress in awareness and infrastructure, challenges remain in ensuring universal access and consistent practice. The Indian government has launched several programs to promote hand hygiene, like Swachh Bharat Mission, Swachh Vidyalaya Abhiyan, and Jal Jeevan Mission. India has made significant strides in improving WASH (Water, Sanitation, and Hygiene, including hand hygiene) services in schools, primarily driven by government initiatives like

the Swachh Bharat Mission (Clean India Mission) and its Swachh Vidyalaya (Clean School) Initiative. Ensuring access to safe drinking water, proper sanitation, and hygiene education is critical for promoting better health and education outcomes in Indian schools. Considering all these observations, the present study focuses on the existing hand hygiene practices and hand washing facilities in the schools of Khudabandpur block of Begusarai district of Bihar. It reflects upon the knowledge and practices of hand hygiene practices in schools.

## 2. Objective

The objective of this paper is to study the knowledge and practices of handwashing facilities in schools among students and its management in schools. For this, the study explores availability and accessibility of hand-washing facilities at schools.

## 3. Methodology

The research was conducted in four selected schools of the Khudabandpur Block of Begusarai District, Bihar. The data was gathered through in-depth interviews and focused group discussion with 279 adolescent girls aged between 10 and 19 years. In addition, teachers, school guards, and representatives of school administration have been thoroughly interviewed to understand the role and influence of school administration and government in providing hand hygiene services in education. The data collected was analysed using descriptive statistics to identify availability and accessibility of handwashing facilities in school.

## 4. Results and Discussion

**Table No. 1.1 Hand Washing Methods**

N=279			
Hand Washing Methods	No. of Respondents	Percentage	
Water only	230	82.4	
Soap and Water	100	35.8	
Others	134	48	

Source: Primary Data

As shown in Table 1.1, handwashing practices among students vary significantly. Specifically, 82.4 per cent of students wash their hands with water alone, while 35.5 per cent use both water and soap. Additionally, 48 per cent of students use other materials such as ash, soil, sand, or other substances, which provide limited hygiene benefits compared to soap.

**Table No. 1.2 Source of Water for Hand Washing**

N=279		
Source of water for hand washing	Yes	No
Hand pump	Yes	----
Borewell/ Tubewell	----	No
Piped water	Yes	----
Dug well	----	No

Source: Primary Data

Table 1.2 revealed that hand pumps serve as the primary source for hand washing in all schools. Although piped water connection is available at the school, it's not functional as the water never passes through it. For instance;

“A 10th-grade girl mentioned that water never flows from the piped water tap. We always use hand pump for hand wash.

Hand-washing techniques are crucial for maintaining personal hygiene and preventing the spread of infections. Proper hand washing involves several steps that ensure thorough cleaning of hands. Forty-

seven per cent of schools lacked a handwashing facility with soap and water, that affects 900 million school-age children. More than one-third of schools worldwide and half of schools in the least developed countries have no facilities for children to wash their hands (Unicef, 2020). 2.2 billion people globally lacked basic handwashing facilities in 2022 (United Nations, 2023). According to Unicef (2020), the following steps for effective handwashing: A quick scrub and rinse will not remove all traces of the virus from your hands. Below is a step-by-step process for effective handwashing.

Steps	Hand Washing Techniques
One	Wet hands with running water
Two	Apply enough soap to cover wet hands
Three	Scrub all surfaces of the hands, including the back of the hands, between fingers, and under nails, for at least 20 seconds.
Four	Rinse thoroughly with running water
Five	Dry hands with a clean cloth or single-use towel

**Table No. 1.3 Knowledge About Hand-Washing Techniques**

N=279		
Knowledge About Hand-Washing Techniques	No. of Respondents	Percentage
Yes	59	21.1
No	220	78.8

Source: Primary data

Table 1.3 shows that only 21.1 per cent of students have knowledge about hand-washing techniques and 78.8 per cent do not have knowledge. The role of school in hygiene education is either negligible or very limited. For instance;

“A group of students reported that they had never received knowledge about proper hand-washing techniques during their time at school.”

“A 10th-grade student mentioned that their science teacher taught them about hand-washing techniques after the lockdown period.”

Therefore, in schools, there appears to be a lack of awareness about proper handwashing techniques among students. Additionally, teachers and school administrators seem to overlook this issue, as students report that there are no discussions or implementations of policies or programs related to hand hygiene by the school administration.

**Table No. 1.4 Hand Washing Before Eating Food**

N=279		
Hand Washing Before Eating Food	No. of Respondents	Percentage
Always	84	30.1
Sometime	102	36.5
Never	93	33.3
N=195		
Reasons for not washing hands before eating food (sometimes or never)	No. of Respondents	Percentage
Laziness or Forgetfulness	98	50.2
Lack of awareness	165	84.6
Lack of water	10	5.1
Lack of soap	100	51.2

Source: Primary data

Table 1.4 shows that only 30.1 per cent of students always wash their hands before eating, while 36.5

per cent do so sometimes, and 33.3 per cent never practice hand-washing before meals. This indicates that a significant portion of the population does not consistently follow proper hand hygiene before consuming food. In Indian culture, handwashing is a ritualistic practice that involves cleaning all the way up to the wrists. In Indian tradition, it denotes ceremonial washing before meals, signifying respect and purity. By highlighting the value of cleanliness and spiritual preparedness in relation to eating, this practice strengthens the cultural relevance of cleanliness in daily life and rituals. Historically in India, it signifies ritual cleanliness before eating, symbolising both purity and respect. Indian traditional texts consider food as divine as it gives life, and one should respect food, so it is mandatory to clean hands before consuming food. Thus, the practice of hand washing is rooted in the cultural belief system and is significant from the health perspective as well (Bista 2023).

Further, the table focused on the reasons for not washing hands before eating, involving 195 respondents who either sometimes or never wash their hands. The results highlighted that 50.2 per cent attributed their behavior to laziness or forgetfulness, while a substantial 84.6 per cent of students lack of awareness as a major factor. Similarly, a study found that the findings of hand washing reveal that though 75.5 per cent knew that hand washing before eating food is important, only 59.9 per cent reportedly washed hands before eating food consistently (Gawai et al. 2016). Additionally, 51.2 per cent mentioned lack of soap as a reason, and only 5.1 per cent reported lack of water as a barrier. These findings suggest that awareness and availability of water and soap are critical factors influencing hand-washing practices before meals.

**Table No. 1.5 Hand Washing After Using Toilet**

<b>N=279</b>		
<b>Hand Washing After Toilet</b>	<b>No. of Respondents</b>	<b>Percentage</b>
Always	90	32.3
Sometimes	134	48
Never	55	19.7
<b>N=189</b>		
<b>Reasons for not washing hands after toilet (sometimes or never)</b>	<b>No. of Respondents</b>	<b>Percentage</b>
Forgetfulness or laziness	85	44.9
Lack of awareness	112	59.2
Lack of water	100	52.9
Lack of soap	150	79.3

Source: Primary data

Table 1.5 revealed that only 32.3 per cent of students consistently wash their hands after using the toilet, while 48 per cent do so irregularly and 19.7 per cent never wash their hands after using the toilet for urination. The primary reasons for not washing hands include 44.9 per cent attributing it to laziness or forgetfulness, 59.2 per cent citing lack of awareness, 52.9 per cent mentioning lack of water, and 79.3 per cent reporting insufficient soap availability. Likewise, a study found that only 18 per cent respondents answered hand washing after toilet use when asked about important times of hand washing (Gawai et al. 2016). The most mentioned reasons for not practicing handwashing are the lack of a place to wash hands, limited water access and lack of soap. 67 per cent of the respondents reported that they seek more information on handwashing, particularly, the critical times and steps of Handwashing with soap. Only 33 per cent of the households had piped water available for handwashing (WaterAid India 2020). Hand washing after using the toilet is a simple yet vital practice for preventing infections and promoting overall health. Awareness campaigns, improved access to soap and clean water, and reminders in public restrooms can encourage better compliance and reduce disease transmission.

## 5. Conclusion

The study highlights significant gaps in hand hygiene practices and the availability of handwashing facilities in schools within the Khudabandpur Block of Begusarai district, Bihar. A large proportion of students rely solely on water for handwashing, and the use of soap is limited due to factors such as lack of awareness, inadequate supply, and poor maintenance of infrastructure. The findings reveal that a majority of students lack knowledge about proper handwashing techniques, and critical hygiene practices, such as washing hands before meals or after using the toilet, are inconsistently followed. Behavioural factors like laziness and forgetfulness, coupled with a lack of awareness and resources such as soap and water, further exacerbate the issue.

The findings also highlight a significant gap in knowledge about proper handwashing techniques among students, as well as limited efforts by school authorities to promote hygiene education. These shortcomings have serious implications for the health and academic performance of students, especially in the context of infectious disease prevention. To address these challenges, it is essential to prioritise awareness campaigns, improve access to soap and clean water, and integrate hygiene education into school curricula. To improve the situation, schools must be supported through better policy implementation, regular monitoring, and awareness programs on hygiene practices. Government bodies, school administrators, and communities should work collaboratively to ensure that basic hygiene services are not just available but also effectively used and maintained.

## References

1. Bista, C. B. (2023). Socio-cultural practice: A case study on Personal Hygienic Behavior in the Hindu Society. *Patan Pragna*, 12(01), 1-12.
2. Gawai, P. P., Taware, S. A., Chatterjee, A. S., & Thakur, H. P. (2016). A cross-sectional descriptive study of hand washing knowledge and practices among primary school children in Mumbai, Maharashtra, India. *Int J Community Med Public Health*, 3(10), 2958-2966.
3. Unicef & WHO (2021). State of the World's Hand Hygiene. <https://www.unicef.org/media/108356/file/State>
4. Unicef. (2020). Everything you need to know to wash your hands: Washing your hands properly can protect you and your loved ones. Unicef. <https://www.unicef.org/guianasuriname/everything-you-need-know-wash-your-hands>
5. WaterAid India (2020) Available from: <https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/hand-hygiene-for-covid-19-and-beyond-in-india-insights-and-recommendations-from-a-rapid-study.pdf>
6. WHO. (2021). Progress on household drinking water, sanitation and hygiene 2000-2020: five years into the SDGs. World Health Organization, Geneva, Switzerland.
7. <https://www.wisdomlib.org/hinduism>