

## Original Research Article

# A comparative study on knowledge, attitude and practices of personal hygiene among urban and rural school students in Mysuru

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## ABSTRACT

**Background:** Personal hygiene is a critical component of overall health, especially among school-aged children, who are vulnerable to hygiene-related illnesses. Students often exhibit inconsistent hygiene practices shaped by their knowledge and attitude, posing public health risks in school environment. This study aimed to compare and assess the knowledge, attitude, and practices related to personal hygiene among urban and rural school students in Mysuru.

**Methods:** A school based cross-sectional study was conducted from January to April 2025 (four months) among 400 students, 200 each from urban and rural schools, selected through purposive sampling. Data were collected using a pretested semi-structured questionnaire covering socio-demographic characteristics and, knowledge, attitude and practice related to personal hygiene. Data were entered in Microsoft Excel and analysed using SPSS v28, applying descriptive and inferential statistics.

**Results:** Among urban students, 58.5% had good knowledge, 84.5% good attitude, and 79.5% good hygiene practices. In comparison, rural students showed higher levels across all domains: 79.0% had good knowledge, 93.5% good attitude, and 84.5% good practices. The Mann-Whitney U test indicated rural students had significantly higher knowledge ( $U=15900$ ,  $Z=-4.417$ ,  $p<0.001$ ) and attitude scores ( $U=18200$ ,  $Z=-2.873$ ,  $p=0.004$ ). The difference in practice scores, was not statistically significant ( $U=19000$ ,  $Z=-1.300$ ,  $p=0.194$ ).

**Conclusions:** Rural students demonstrated significantly better knowledge and attitude. However, the lack of significant difference in practice scores suggests the need for interventions that emphasize behaviour reinforcement alongside awareness.

**Keywords:** Health education, Hygiene, Public health, Schools, Students

## INTRODUCTION

Hygiene refers to practices or behaviors that help maintain health and prevent illness by keeping oneself clean.<sup>1</sup> A healthy lifestyle is largely built on the knowledge and habits formed in childhood, as good childhood practices contribute to well-being in adulthood.<sup>2</sup> Childhood plays an important role in moulding an individual personality and also for development of positive values about health and various

health services.<sup>3</sup> There are about 200.6 million children in the age group of 6-12 years globally, out of which 40% are in India.<sup>4</sup> If individuals are taught the basic concept at younger age, it can influence their health and ultimately the productivity and economy of nation at large.<sup>5</sup>

At the beginning of 20<sup>th</sup> century, major cause of childhood mortality in age group of 5 to 14 years was due to many infectious diseases which mainly resulted from lack of personal hygiene.<sup>6</sup> Majority of minor ailments in

children can be prevented by adopting primordial preventive strategies and educating the children periodically.<sup>7</sup> Various benefits of good personal hygiene include lower morbidity and mortality rates among children, better nutrition, cleaner environments, social development and better learning and retention of children in school.<sup>8</sup> India has the largest population of school-going children who are vulnerable to get affected with infections and diseases.<sup>9</sup> Poor cleanliness increases children's exposure to germs, making them more prone to illnesses like cold, fever, diarrhoea, and flu.<sup>10,11</sup> Nearly half the world's students, or 818 million, do not have access to basic sanitation facilities at school. According to the data, almost 25% of the students also lack basic toiletries at school.<sup>12</sup> Around 21% of the schools in the state of Karnataka do not have basic facilities for handwashing, wherein 12% of the schools are government-aided schools.<sup>13</sup> Although almost all schools in India (97.32%) have sanitary facilities for girls, nearly half of these units (50,959) are not in proper working condition.<sup>14</sup> According to the United Nations 2012 report, around 2.5 billion people still lack access to improved sanitation facilities, and more than one billion continue to practice open defecation. In developing countries, inadequate personal hygiene remains a major contributor to diarrhoea, which is a leading cause of death among children under five.<sup>15</sup>

In India, diarrhea accounts for 13% of all deaths in children under the age of five each year, making it the third most common cause of childhood mortality.<sup>16</sup> India has a high prevalence of Soli-Transmitted Helminth (STH) infections, especially in preschool and school-aged children. STH infections can be successfully managed and prevented through mass drug administration along with improved water, sanitation, and hygiene practices.<sup>17</sup> The WHO/UNICEF Joint Monitoring Program for Water Supply, Sanitation, and Hygiene 2023 update estimated that in 2022, 27% of the world's population did not have access to "safely managed drinking water", 43% of the world's population lacked "safely managed sanitation", and 25% of the world's population lacked access to a handwashing station with soap and water at home.<sup>18</sup> Social rejection can also result from inadequate hygiene, particularly for children from lower-income households.<sup>19</sup>

In light of the above evidence, and acknowledging the critical importance of the most basic personal hygiene behaviours in reducing childhood morbidity and mortality, this study was undertaken to assess and compare the knowledge, attitude, and practices of personal hygiene among schoolchildren in urban and rural regions.

## METHODS

A comparative cross-sectional study was conducted over a period of four months, from January to April 2025, among school-going children from the urban and rural field practice areas of JSS Medical College, Mysuru. The

study population included students from 1<sup>st</sup> to 12<sup>th</sup> standard residing in these areas.

### Sample size calculation

The sample size was calculated using the formula for comparing two proportions:

$$n = \frac{2(Z_{\alpha/2} + Z_{\beta})^2 PQ}{(p_1 - p_2)^2}$$

The values  $p_1 = 0.96$  (urban) and  $p_2 = 0.88$  (rural) were taken from Kaur et al, who reported that 96% of urban and 88% of rural school-going children had a positive attitude toward personal hygiene.<sup>1</sup> Using these values,  $P = \frac{p_1 + p_2}{2}$ ,  $Q = 1 - P$ ,  $Z_{\alpha/2} = 1.96$  (95% confidence), and  $Z_{\beta} = 0.84$  (80% power), and applying an absolute precision of 5%, the minimum required sample size was estimated as 200 students per group.

### Inclusion criteria

School students residing in the urban or rural areas of Mysuru, ability to understand and respond in Kannada or English, parental assent obtained.

### Exclusion criteria

Students with known cognitive or developmental disorders. Students with hearing or speech impairments, which may limit their ability to comprehend or respond to the questionnaire.

### Sampling and recruitment

A purposive sampling method was used to recruit study participants. Participants were recruited from children attending the outpatient department (OPD) of the primary health centres (PHCs) located within the respective urban and rural field practice areas.

### Ethical considerations

Ethical clearance was obtained from the institutional ethics committee of JSS Medical College, Mysuru (Approval No. JSSMC/IEC/492025/18 NCT/2025-26). Parental assent was obtained prior to data collection. Confidentiality and voluntary participation were ensured throughout the study.

### Data collection tool

Data were collected using a semi-structured questionnaire developed after an extensive literature review to ensure suitability for the school setting and easy comprehension for students from 1<sup>st</sup> to 12<sup>th</sup> standard. The questionnaire underwent content validation by subject experts for

relevance, clarity, and coverage, and face validation to ensure readability and appropriateness.

The tool consisted of four sections: section A: socio-demographic profile (age, gender, class, area of residence). Section B: knowledge (meaning of personal hygiene, benefits, importance of handwashing, hygiene-related health issues). Section C: attitude (importance of hygiene, whether hygiene should be taught in schools, willingness to spend time on hygiene). Section D: practice (handwashing behaviour, bathing, brushing teeth, changing clothes, trimming nails, use of soap).

### Scoring criteria

Domain scores were categorized using a >50% cut-off, where scores above 50% were classified as good and scores ≤50% were classified as poor. Knowledge (0-4): 0-2 = poor, 3-4 = good; attitude (0-3): 0-1 = poor, 2-3 = good; practice (0-8): 0-4 = poor, 5-8 = good.

### Data entry and statistical analysis

Data were entered in Microsoft Excel 2021 and analyzed using SPSS version 26. Descriptive statistics (frequency and percentage) were calculated. The Mann-Whitney U test was used to compare KAP scores between urban and rural students.

## RESULTS

### Participant characteristics

A total of 400 students were included in the study, 200 from urban and 200 from rural respectively. The age distribution differed markedly between groups, a majority of urban students (65.0%) were aged 15-18 years, whereas most rural students (74.5%) were aged 11-14 years. Only 15.0% of rural students belonged to the 15-18 age group.

**Table 1: Distribution of study participants based on socio-demographic details.**

Variables	Category	Urban N (%)	Rural N (%)
Age (years)	7-10	7 (3.5)	21 (10.5)
	11-14	63 (31.5)	149 (74.5)
	15-18	130 (65)	30 (15)
Gender	Male	108 (54)	94 (47)
	Female	92 (46)	106 (53)
Grade	3 <sup>rd</sup> to 5 <sup>th</sup> std	9 (4.5)	40 (20)
	6 <sup>th</sup> to 8 <sup>th</sup> std	48 (24)	124 (62)
	9 <sup>th</sup> to 12 <sup>th</sup> std	143 (71.5)	36 (18)

**Table 2: Cumulative scores of knowledges, attitude and practice.**

Domain	Score range	Urban N (%)	Rural N (%)
Knowledge	Good (3-4)	117 (58.5)	158 (79)
	Poor (0-2)	83 (41.5)	42 (21)
Attitude	Good (2-3)	169 (84.5)	187 (93.5)
	Poor (0-1)	31 (15.5)	13 (6.5)
Practice	Good (5-8)	159 (79.5)	169 (84.5)
	Poor (0-4)	41 (20.5)	31 (15.5)

Gender distribution was comparable across the two settings (urban: 54.0% male; rural: 47.0% male). With respect to grade level, most urban students were in higher grades (71.5% in grades 9-12), while rural students were largely in middle-school grades (62.0% in grades 6-8). Overall, the urban group tended to be older and academically advanced compared to the predominantly younger rural group (Table 1).

### Knowledge of personal hygiene

Rural students generally had higher knowledge scores. Good knowledge (score 3-4) was observed in 58.5% (117/200) of urban students and 79.0% (158/200) of rural

students (Table 2). Specific knowledge items also differed, 80% (160/200) of rural students identified “keeping the body clean” as the meaning of personal hygiene compared to 63% (126/200) of urban students. Likewise, 91.5% of rural students (183/200) knew that handwashing with soap removes germs, versus 82.5% of urban students (165/200). A larger proportion of rural students (87.5%, 175/200) recognized that improper hygiene can cause health issues compared to urban students (64.5%, 129/200) (Table 3). These differences were statistically significant where Mann-Whitney U test showed higher knowledge scores in rural students (mean rank 221.00) than in urban students (mean rank 180.00),  $U=15900.0$ ,  $Z=-4.417$ ,  $p<0.001$  (Table 6).

**Table 3: Distribution of study participants based on knowledge of personal hygiene.**

Variables	Category	Urban N (%)	Rural N (%)
What does personal hygiene mean to you?	Keeping the body clean	126 (63)	160 (80)
	Avoiding exposure to germs and infections	32 (16)	21 (10.5)
	Eating healthy food	40 (20)	17 (8.5)
	Don't know	2 (1)	2 (1)
What are the benefits of maintaining personal hygiene?	Preventing illness	119 (59.25)	111 (55.5)
	Feeling fresh and clean	76 (38)	77 (38.5)
	Impressing others	3 (1.5)	8 (4)
	Don't know	2 (1)	4 (2)
Why is it important to wash hands with soap?	To remove germs and prevent diseases	165 (82.5)	183 (91.5)
	To make hand smell good	30 (15)	12 (6)
	Not important	5 (2.5)	2 (1)
	Don't know	0	3 (1.5)
Can improper hygiene cause health issues?	Yes	129 (64.5)	175 (87.5)
	No	39 (19.5)	25 (12.5)
	Don't know	32 (16)	0

**Table 4: Distribution of study participants based on attitude of personal hygiene.**

Variable	Category	Urban N (%)	Rural N (%)
How important do you think personal hygiene is?	Very important	162 (81)	186 (93)
	Somewhat important	35 (17.5)	10 (5)
	Not important	3 (1.5)	4 (2)
Do you think personal hygiene should be taught in school?	Strongly agree	111 (55.5)	92 (46)
	Agree	65 (32.5)	42 (21)
	Neutral	21 (10.5)	37 (18.5)
	Disagree	2 (1)	25 (12.5)
	Strongly disagree	1 (0.5)	4 (2)
Are you willing to spend time every day maintaining hygiene?	Yes	173 (86.5)	193 (96.5)
	No	27 (13.5)	7 (3.5)

### Attitude towards personal hygiene

Positive attitudes were more prevalent in rural students. Good attitude (score 2-3) was found in 84.5% (169/200) of urban students and 93.5% (187/200) of rural students (Table 2). On specific attitude questions, 93.0% (186/200) of rural students rated personal hygiene as "very important," compared to 81.0% (162/200) of urban students. Similarly, 96.5% (193/200) of rural students reported they were willing to spend time daily on hygiene, versus 86.5% (173/200) of urban students (Table 4). Mann-Whitney U analysis indicated significantly higher attitude scores among rural students (mean rank 209.50) than urban students (mean rank 191.50),  $U=18200.0$ ,  $Z=-2.873$ ,  $p=0.004$  (Table 6).

### Practice of personal hygiene

Hygiene practices differed between two groups but the overall practice scores did not differ significantly. Good

practice (score 5-8) was observed in 79.5% (159/200) of urban students and 84.5% (169/200) of rural students (Table 2).

Urban students were somewhat more likely to report certain practices, 75.5% (151/200) of urban students reported always using soap for handwashing, compared to 50.5% (101/200) of rural students. Similarly, 74.0% (148/200) of urban students said they brush their teeth twice daily, versus 37.5% (75/200) of rural students. Conversely, a higher proportion of rural students reported always washing hands before eating (89.5% versus 71.0%) and after toilet use (93.5% versus 79.0%). Rural students also tended to bathe daily less frequently (75.5% versus 83.5%) while trim nails weekly more frequently (80.0% versus 62.0%) than urban students (Table 5). The Mann-Whitney U test showed no significant difference in practice scores between groups (urban mean rank 195.50 versus rural 205.50;  $U=19000.0$ ,  $Z=-1.300$ ,  $p=0.194$ ) (Table 6).

**Table 5: Distribution of study participants based on practice of personal hygiene.**

Variables	Category	Urban N (%)	Rural N (%)
<b>How often do you wash your hands before eating?</b>	Always	142 (71)	179 (89.5)
	Sometimes	45 (22.5)	17 (8.5)
	Rarely	9 (4.5)	2 (1)
	Never	4 (2)	2 (1)
<b>How often do you wash your hands after using the toilet?</b>	Always	158 (79)	187 (93.5)
	Sometimes	33 (16.5)	10 (5)
	Rarely	7 (3.5)	2 (1)
	Never	2 (1)	1 (0.5)
<b>Do you use soap for handwashing?</b>	Always	151 (75.5)	101 (50.5)
	Sometimes	38 (19)	86 (43)
	Rarely	9 (4.5)	6 (3)
	Never	2 (1)	7 (3.5)
<b>How often do you bathe?</b>	Daily	167 (83.5)	151 (75.5)
	Alternate days	27 (13.5)	48 (24)
	Weekly	5 (2.5)	1 (0.5)
	Less often	1 (0.5)	0
<b>How often do you brush your teeth?</b>	Twice a day	148 (74)	75 (37.5)
	Once a day	48 (24)	122 (61)
	Occasionally	3 (1.5)	1 (0.5)
	Never	1 (0.5)	2 (1)
<b>How often do you change clothes?</b>	Daily	156 (78)	172 (86)
	Every other day	32 (16)	24 (12)
	Weekly	9 (4.5)	3 (1.5)
	Rarely	3 (1.5)	1 (0.5)
<b>How often do you trim your nails?</b>	Weekly	124 (62)	160 (80)
	Occasionally	66 (33)	37 (18.5)
	Never	10 (5)	3 (1.5)
<b>Where do you usually learn about personal hygiene?</b>	Family	89 (44.5)	125 (62.5)
	School	70 (35)	63 (31.5)
	Media	26 (13)	6 (3)
	Friends	15 (7.5)	6 (3)

**Table 6: Comparison of knowledge, attitude, and practice scores between urban and rural students using Mann-Whitney U Test (n=400).**

Variables	Group	N	Mean Rank	U-value	Z-value	p-value	Significance
<b>Knowledge</b>	Urban	200	180.00	15900.0	-4.417	< 0.001	Significant
	Rural	200	221.00				
<b>Attitude</b>	Urban	200	191.50	18200.0	-2.873	0.004	Significant
	Rural	200	209.50				
<b>Practice</b>	Urban	200	195.50	19000.0	-1.300	0.194	Not Significant
	Rural	200	205.50				

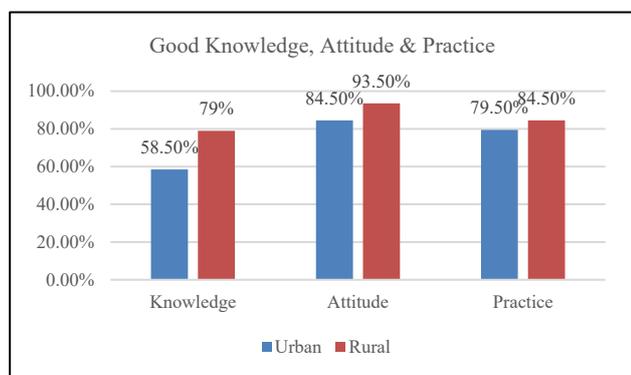
### Source of hygiene information

Family was the most commonly reported source of personal hygiene information in both groups, cited by 62.5% of rural and 44.5% of urban students. Schools were the second most common source (urban: 35.0%; rural: 31.5%). Media exposure contributed more to hygiene awareness among urban students (13.0% versus 3.0% in rural areas). Friends were the least common source in both settings (Table 5). These findings

underscore the central role of family in promoting hygiene knowledge, particularly in rural communities.

Taken together, the results highlight that although rural students possessed significantly better knowledge and attitudes toward personal hygiene, both groups reported similar levels of hygienic practices. Overall, while rural students exhibited superior knowledge and attitudes toward personal hygiene, both groups showed nearly similar levels of hygienic practice, indicating that better

awareness does not fully translate into proportionally better hygiene-related behaviours (Figure 1). This indicates a persistent knowledge-practice gap, suggesting that awareness alone may be insufficient to drive behavioural change. The findings emphasise the importance of implementing targeted, behaviour-oriented interventions that address the contextual barriers influencing daily hygiene habits.



**Figure 1: Distribution of study participants based on good KAP scores (n=400).**

## DISCUSSION

In the present study, rural students demonstrated markedly better knowledge and more favourable attitude towards personal hygiene compared to their urban counterparts. However, despite these advantages, both groups reported comparable levels of hygienic practices. This disconnect between knowledge and practice reflects a behavioural gap, suggesting that awareness alone may not be sufficient to produce consistent hygiene-related behaviours among school children.

A clear rural-urban difference was observed with respect to knowledge regarding personal hygiene, with good knowledge documented in 79.0% of rural students compared to 58.5% of urban students. This difference was further evident in responses to specific knowledge items, where a higher proportion of rural students correctly identified the meaning of personal hygiene, understood the role of soap in removing germs, and recognised the health consequences of poor hygiene. These findings point towards a stronger conceptual understanding of hygiene-related issues among rural students and were supported by a statistically significant difference in overall knowledge scores. When compared with earlier studies, the level of knowledge observed among urban students exceeds that reported by Chutia et al from Bengaluru, where only 49.07% of students demonstrated good knowledge, although a similar gender pattern was noted, with female students achieving higher knowledge scores.<sup>9</sup> In contrast, Devi et al, in a rural study from Assam, reported that 58.3% of participants had moderately adequate knowledge, which is substantially lower than the proportion of rural students with good knowledge observed in this study.<sup>20</sup> Studies from other

regions have reported even higher awareness levels; for instance, Kamaiseh et al, from Jordan, documented excellent knowledge of personal hygiene in over 90% of students.<sup>21</sup> Although such high levels were not observed here, the comparatively better performance of rural students may reflect the influence of recent school-based health education activities, community awareness initiatives, and local public health interventions. Overall, these comparisons underscore the wide variation in knowledge levels across different contexts and highlight the role of educational exposure and health promotion efforts in shaping students' understanding of personal hygiene.

With regard to attitudes, hygiene-related perceptions were largely positive among both urban and rural students, with a significantly higher proportion of favourable attitudes observed among rural students. Good attitude scores were reported by 93.5% of rural students compared to 84.5% of urban students, and this difference was statistically significant. This rural advantage was also reflected in responses to specific attitude items, where a greater proportion of rural students rated personal hygiene as very important and expressed a willingness to devote time daily to hygiene practices. When compared with earlier studies, the level of positive attitude observed among urban students is higher than that reported by Chutia et al from Bengaluru, where approximately 58.33% of students demonstrated a positive attitude towards personal hygiene.<sup>9</sup> In contrast, findings from Kaur et al. indicated higher mean attitude scores among urban children than rural children (74.18 versus 68.10), which differs from the pattern observed here, where rural students consistently demonstrated more favourable attitudes.<sup>1</sup> Evidence from other regions also supports the presence of strong positive attitudes towards hygiene; for instance, Kamaiseh et al, from Jordan, reported excellent attitudes towards key hygiene behaviours such as handwashing with soap, brushing teeth with toothpaste, and the use of personal hygiene items. However, they also identified gaps in certain attitude and practice domains, suggesting that favourable attitudes may not be uniformly expressed across all aspects of hygiene.<sup>21</sup>

Encouraging levels of hygiene practices were noted among both urban and rural school children, with 79.5% of urban students and 84.5% of rural students demonstrating good hygiene practices and no statistically significant difference in overall practice scores between the two groups. These findings suggest better practice levels than those reported in several earlier studies conducted in comparable settings. Among urban populations, a study from Bengaluru by Chutia et al reported that 59.26% of students exhibited only moderate levels of personal hygiene practices, which is considerably lower than the proportion of good practices observed among urban students in this study.<sup>9</sup> In rural settings, Mangal et al, from Rajasthan, found that only 22% of students demonstrated good personal hygiene practices, while Devi et al, in rural Assam, reported that

70% of students exhibited average hygiene practices; both findings indicate lower practice levels compared to the 84.5% of rural students with good practices observed here.<sup>20,22</sup> Similar findings were reported by Minda et al in Ethiopia, where 59.2% of students demonstrated good hygiene practices, with only moderate adherence to behaviours such as latrine use, handwashing, and oral hygiene.<sup>23</sup> Studies from other regions further illustrate variability in specific hygiene behaviours rather than uniformly high practice levels. For instance, Sadiq et al, in Pakistan, reported high compliance with handwashing practices (88%) and regular tooth brushing (78%), alongside lower adherence to nail trimming and daily bathing (44% each).<sup>24</sup> A comparable variation across individual practices was evident in this study, with urban students reporting higher frequencies of twice-daily tooth brushing and soap use for handwashing, while rural students demonstrated greater consistency in handwashing before meals and after toilet use, along with more regular nail trimming. The relatively higher practice levels observed may reflect improvements in school health programmes, sanitation initiatives, and sustained behavioural reinforcement, while the absence of a significant urban–rural difference suggests that contextual and cultural factors may exert a greater influence than place of residence alone.

The higher knowledge and attitude scores among rural students may be attributed to recent public health activities in these areas. In the months preceding data collection, several rural schools had reported outbreaks of scabies, prompting intensified health education sessions, improved hygiene monitoring, and focused awareness campaigns. These additional interventions could have contributed to the enhanced awareness and attitudes observed among rural students in our study.

Taken together, these differences show that hygiene-related knowledge and attitudes are shaped by the specific environments, resources, and educational initiatives that the students are exposed to. Recognising this variability is important for designing interventions that effectively address the behavioural and structural barriers influencing hygiene practices. Strengthening school-based health education, ensuring reliable access to water and soap, and tailoring hygiene programs to the context-specific needs of urban and rural populations are essential for supporting sustained hygiene behaviours and promoting more equitable health outcomes among school children.

This study has several notable strengths, including a comparative analysis across urban and rural settings, which allowed for a clearer understanding of contextual differences in hygiene-related knowledge, attitudes, and practices, as well as the inclusion of a large and diverse sample that enhances the generalizability of the findings. However, certain limitations should be acknowledged. The cross-sectional design of the study restricts the ability to infer causal relationships between knowledge, attitudes, and hygiene practices, and the reliance on self-

reported practices may have introduced reporting bias. Despite these limitations, the findings provide valuable insights into hygiene behaviours among school children and offer a useful foundation for future longitudinal and interventional research.

## CONCLUSION

This study revealed that while rural students demonstrate stronger knowledge and attitudes toward personal hygiene than their urban counterparts, these advantages do not translate proportionally into improved hygienic practices. The similarity in practice levels across both settings suggests that behaviour is shaped not only by awareness but also by environmental constraints, access to resources, and daily routines. These findings highlight the need for interventions that go beyond traditional health education.

By recognising the distinct challenges faced by urban and rural school students, policymakers and educators can design more targeted and sustainable hygiene promotion initiatives. Tailored interventions that address real barriers and support daily practice have the potential to substantially improve children's health and contribute to broader public health goals, including equitable progress toward universal health coverage.

## Recommendations

Strengthening hygiene practices among school children requires a comprehensive approach that combines education, infrastructure, behavioural strategies, and community involvement. School-based hygiene education should be reinforced by integrating structured hygiene modules into the curriculum, with particular emphasis on handwashing, dental hygiene, and menstrual hygiene where appropriate, and by prioritizing practical demonstrations over purely didactic teaching methods. Simultaneously, schools must ensure consistent access to basic hygiene infrastructure, including the availability of clean water, soap, and functional handwashing stations, along with regular maintenance of toilet facilities to promote their sustained use. Behaviour-change strategies should be incorporated through the use of simple nudges such as posters, visual cues, and fixed handwashing routines before meals and after toilet use, as well as through the establishment of peer-led hygiene clubs that can help reinforce positive practices among students. In addition, engaging parents and the wider community through periodic awareness sessions can strengthen the reinforcement of hygiene behaviours at home, while encouraging parent-child hygiene routines using reminders or activity charts can support the translation of knowledge into consistent daily practice.

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