

Assessing Health, Hygiene, and Sanitizing Practices Among School Students: A Study of Waghai Taluka in the Dang District

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Abstract:

This study explores the health, hygiene, and sanitizing behaviors of school students in the Dang District, Gujarat, focusing on their perceptions and practices. Using a structured questionnaire grounded in the Theory of Planned Behavior (TPB) and the Health Belief Model (HBM), data were collected from 261 students in standards 11 and 12 at the Government Agriculture School of Waghai taluka. The questionnaire included demographic details and hygiene-related variables, with responses recorded on a 5-point Likert scale. Data analysis using SPSS 27 revealed high awareness and adherence to hygiene practices, with significant gender differences in attitudes. Females showed stronger agreement on hygiene behaviors compared to males. The study identifies gaps in behavioral intensity, highlighting the need for targeted health education interventions. These findings contribute to designing effective school-based programs to foster better hygiene practices and improve health outcomes in rural and semi-urban settings.

Introduction:

Health and hygiene are essential pillars of personal and community well-being, particularly for school-aged children who are highly susceptible to spreading infectious diseases due to frequent interactions in shared spaces. Effective hygiene practices, such as regular handwashing, covering the mouth while coughing or sneezing, and maintaining personal cleanliness prevent illness and foster a healthy learning environment. Schools serve as a critical setting for promoting these practices, especially in rural and semi-urban regions where access to health education and resources may be limited.

Promoting health and hygiene practices among students takes on heightened significance in the context of the Dang District of Gujarat, where socio-economic and infrastructural challenges coexist. Behavioral theories, such as the Theory of Planned Behavior (TPB) and the Health Belief Model (HBM), provide a robust framework for understanding the factors that influence hygiene-related behaviors. These theories explore attitudes, subjective norms, perceived behavioral control, and health beliefs, collectively shaping individuals' intentions and actions toward adopting healthy practices.

This research paper aims to assess the behaviors and perceptions of students in the Government Agriculture School of Waghai taluka in the Dang District regarding health, hygiene, and sanitizing practices. The study focuses on students from standards 11 to 12, capturing diverse adolescent perspectives. A structured questionnaire based on the TPB and HBM was used to

gather data from 261 students, with the responses analyzed using SPSS 27 to identify patterns and associations.

The findings of this study are expected to provide valuable insights into the current state of hygiene behaviors among students and the factors influencing these practices. This knowledge can inform the design of targeted health education programs and interventions to improve hygiene practices and health outcomes in school settings. By addressing students' specific needs and challenges in the Dang District, this research contributes to the broader goal of fostering healthier school communities and reducing the burden of preventable illnesses.

Review of Literature:

Understanding students' behaviors toward health, hygiene, and sanitizing practices is crucial for developing effective interventions in educational settings. Research indicates that promoting proper hygiene among students can significantly reduce the transmission of infectious diseases and improve overall health outcomes.

A systematic review by Schmidtke et al. (2020) emphasized the importance of integrating personal hygiene practices, such as handwashing, with environmental disinfecting to prevent the spread of infections in settings involving children. The study highlighted that simultaneous encouragement of personal and environmental hygiene is essential for effective disease prevention.

Similarly, Lozier et al. (2023) assessed hand hygiene knowledge and behaviors among elementary school students in Guatemala. The findings revealed gaps in students' understanding and practices, underscoring the need for targeted interventions to improve hand hygiene behaviors in resource-limited settings.

In the context of educational interventions, a systematic review by Willmott et al. (2016) evaluated the effectiveness of hand hygiene programs in reducing illness-related absenteeism among children. The meta-analysis concluded that hand hygiene interventions in schools effectively decrease absenteeism due to gastrointestinal and respiratory infections, highlighting the critical role of hygiene education in promoting student health.

Furthermore, a study by Bülbül Maraş and Kocaçal (2024) explored determinants of hand hygiene among nursing students using the Theory of Planned Behavior. The research identified factors influencing hand hygiene behaviors, providing insights into designing effective educational strategies for healthcare students.

Kasmaei et al. (2014) examined tooth-brushing behavior among young adolescents using the Health Belief Model (HBM). The findings revealed that perceived severity and perceived

benefits were significant predictors of brushing behavior, suggesting that enhancing these perceptions through educational interventions could improve oral hygiene practices among students.

Similarly, Mohammadkhah et al. (2022) investigated the effect of training based on the HBM and behavioral intention on dental and oral health behaviors in female students aged 9–12. The study demonstrated that educational programs grounded in the HBM effectively improved self-care behaviors, highlighting the model's utility in designing health education interventions.

In the context of hand hygiene, Bülbül Maraş and Kocaçal (2024) explored determinants of hand hygiene among nursing students using the Theory of Planned Behavior (TPB). The research identified that attitudes, subjective norms, and perceived behavioral control significantly influenced hand hygiene intentions, providing insights into designing effective educational strategies for healthcare students.

Furthermore, a study by De Vries et al. (1988) introduced the attitude–social influence–self–efficacy (ASE) model, integrating concepts from the TPB and HBM to predict health behaviors. The model emphasizes the role of self-efficacy alongside attitudes and social influences, offering a comprehensive framework for understanding and influencing health behaviors among students.

Methodology:

This study employed a descriptive research design to assess the behavior and perceptions of school students regarding health, hygiene, and sanitizing practices. The study aimed to explore awareness, agreement, and potential behavioral gaps using structured questionnaires based on established theoretical models. The research was conducted at the Government Agriculture School of Waghai Taluka in the Dang District of Gujarat. The sample comprised 261 students from standards 11 and 12. The selection of these students' ensured representation across multiple age groups and academic levels, providing a comprehensive understanding of health and hygiene behaviors.

A structured questionnaire was developed and distributed among the students during regular classroom sessions. The researcher personally explained all the questions to the students to ensure clarity and eliminate potential misunderstandings. Students provided their responses independently, ensuring the authenticity of the data collected. The study was grounded in the Theory of Planned Behavior (TPB) and the Health Belief Model (HBM), both well-established frameworks for understanding health-related behaviors.

The researcher obtained permission from the school authorities and ensured voluntary participation. Students were informed about the purpose of the study, and their responses were kept anonymous and confidential. The collected data were entered and analyzed using SPSS Version 27.

Results:

This section presents the study's findings, which analyzed the behavior and perceptions of school students in the Dang District regarding health, hygiene, and sanitizing practices. The data, collected from 261 students, are examined through crosstabulations and statistical tests to identify patterns and associations, mainly focusing on gender differences. The results provide insights into awareness, agreement, and potential gaps in adopting essential hygiene practices, offering a foundation for targeted interventions and educational strategies.

Do you believe that washing hands with soap and water for at least 20 seconds, especially before eating, after using the restroom, or after coughing/sneezing, will help improve health? * Gender of the Students

Crosstab

Count

	Gender of the Students		Total
	Male	Female	
Do you believe that washing hands with soap and water for at least 20 seconds, especially before eating, after using the restroom, or after coughing/sneezing, will help improve health?			
Strongly Agree	84	142	226
Agree	16	17	33
Neutral	1	0	1
Disagree	1	0	1
Total	102	159	261

Most students (226 out of 261, approximately 86.6%) strongly agree that washing hands with soap and water for at least 20 seconds improves health. Among them, 84 are male, and 142 are female, indicating that females more strongly align with this belief. Very few students (only 2 out of 261, less than 1%) are neutral or disagree, with one male in each category. This indicates that the overall disagreement or ambivalence towards the importance of handwashing is minimal.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.691 ^a	3	.196
Likelihood Ratio	5.307	3	.151
Linear-by-Linear Association	3.910	1	.048
N of Valid Cases	261		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .39.

The Pearson Chi-Square value is 4.691 with a p-value of 0.196, more significant than the significance level of 0.05. This suggests that no statistically significant association exists between gender and belief in the importance of washing hands for health improvements.

Do you believe that covering the mouth and nose with a tissue or the elbow when coughing or sneezing prevents the spread of germs? * Gender of the Students

Crosstab

Count

	Gender of the Students		Total
	Male	Female	
Do you believe that covering the mouth and nose with a tissue or the elbow when coughing or sneezing prevents the spread of germs?			
Strongly Agree	79	152	231
Agree	21	7	28
Neutral	1	0	1
Disagree	1	0	1
Total	102	159	261

The majority of students (231 out of 261, approximately 88.5%) strongly agree that covering the mouth and nose with a tissue or elbow when coughing or sneezing helps prevent the spread of germs. This includes 79 males and 152 females, indicating stronger agreement among

females. Very few students (2 out of 261, less than 1%) are neutral or disagree, with only males represented in these categories.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.604 ^a	3	.000
Likelihood Ratio	21.018	3	.000
Linear-by-Linear Association	19.508	1	.000
N of Valid Cases	261		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .39.

The Pearson Chi-Square value is 20.604 with a p-value of 0.000, less than the 0.05 significance level. This indicates a statistically significant association between gender and the belief in covering the mouth and nose when coughing or sneezing.

Do you believe that taking regular showers or baths, brushing your teeth twice a day, and wearing clean clothes will prevent the spread of illnesses * Gender of the Students

Crosstab

Count

	Gender of the Students		Total
	Male	Female	
Do you believe that taking regular showers or baths, brushing your teeth twice a day, and wearing clean clothes will prevent the spread of illnesses	Strongly Agree 86	154	240
	Agree 15	4	19
	Neutral 1	1	2
Total	102	159	261

Most students (240 out of 261, approximately 92%) strongly agree that regular showers or baths, brushing their teeth twice a day, and wearing clean clothes help prevent the spread of illnesses. This includes 86 males and 154 females, indicating substantial agreement among

females. Only two students (0.8% of the sample) were neutral, equally distributed between males and females.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.847 ^a	2	.001
Likelihood Ratio	13.767	2	.001
Linear-by-Linear Association	10.754	1	.001
N of Valid Cases	261		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .78.

The Pearson Chi-Square value is 13.847 with a p-value of 0.001, less than the 0.05 significance level. This indicates a statistically significant association between gender and belief in the importance of personal hygiene practices for illness prevention.

Discussion:

The findings of this study provide critical insights into the behaviors and perceptions of school students in the Dang District regarding health, hygiene, and sanitizing practices. This discussion contextualizes the results within broader health promotion frameworks. It highlights key patterns, gender differences, and implications for educational policy and intervention.

The overall high level of agreement among students across all hygiene-related practices: washing hands with soap, covering the mouth and nose while coughing or sneezing, and maintaining personal hygiene reflects significant awareness of basic health practices. This indicates that health education initiatives in the Dang District schools may already effectively convey the importance of these practices. The overwhelming "Strongly Agree" responses (above 85% in all cases) suggest that most students are aware of and internalize these practices as critical for preventing illnesses.

Females consistently exhibited more "Strongly Agree" responses than males across all hygiene practices. While mainly agreeing, males were more represented in the "Agree" category, indicating a slightly less emphatic endorsement of these practices. This gender difference could be attributed to varying degrees of emphasis on hygiene practices in upbringing or societal

expectations. It also underscores the need for targeted interventions to address these disparities, ensuring that both genders adhere equally strongly to hygiene norms.

Conclusion:

This study aimed to assess school students' behavior in the Dang District towards health, hygiene, and sanitizing practices. The findings reveal high awareness and positive attitudes among students regarding essential hygiene practices, such as handwashing, covering the mouth and nose when coughing or sneezing, and maintaining personal cleanliness. The overwhelming agreement on these practices underscores the effectiveness of current health education initiatives in the region.

Notably, gender differences were observed in the intensity of agreement, with females showing more substantial alignment with the importance of hygiene practices than males. While most students demonstrated a strong understanding of these practices' role in preventing illnesses, the small percentage of neutral or disagreeing responses indicates areas for potential improvement. These gaps highlight the need for targeted educational interventions and resource accessibility to ensure equitable adoption of hygiene behaviors across genders.

The study also underscores the importance of sustained health promotion efforts in schools, including interactive sessions, visual reinforcements, and community engagement, to embed these practices into students' daily lives. Policymakers and educators must prioritize gender-sensitive and resource-driven strategies to maintain and enhance student hygiene standards.

Overall, this research contributes valuable insights into the behavioral patterns of students regarding hygiene and health, providing a foundation for improving health education programs in rural areas. Future research should focus on longitudinal studies and broader regional comparisons to develop comprehensive, scalable solutions for fostering better hygiene practices among students. Schools can play a pivotal role in shaping healthier communities by addressing the identified gaps and sustaining positive behaviors.

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