

Submitted: 04 September 2026

Accepted: 23 September 2026

Published: 25 September 2026

The relationship between school sanitation and clean and healthy living behavior compliance among grade VII a and VII b students

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Abstract

Background: School sanitation plays an important role in supporting the implementation of Clean and Healthy Living Behavior (CHLB) among students. Inadequate sanitation facilities may hinder students from maintaining healthy behaviors and increase the risk of health problems.

Purpose: This study aimed to determine the relationship between school sanitation and CHLB compliance among Grade VII A and VII B students.

Method: This quantitative study used a cross-sectional design involving 38 Grade VII students selected using purposive sampling. Data were collected using validated and reliable questionnaires. Data were analysed using the chi-square test.

Results: Most respondents were classified as having poor school sanitation (34/89.5%), while 4 respondents (10.5%) were classified as having good school sanitation. Most respondents were also classified as non-compliant with CHLB (34/89.5%), while 4 respondents (10.5%) were compliant. The chi-square test showed a significant relationship between school sanitation and CHLB compliance ($p < 0.05$).

Conclusion: School sanitation was significantly associated with CHLB compliance among Grade VII students. Improving sanitation facilities and strengthening health education may support the implementation of CHLB in the school environment.

Keywords: Clean and Healthy Living Behavior; Environmental Health; School Sanitation; Student Compliance.

INTRODUCTION

Health is a crucial aspect that determines a person's ability to carry out activities and be productive. A healthy body enables individuals to carry out activities optimally, while declining health can hinder these activities. Health problems are experienced not only by adults but also by children, with variations in disorders influenced by their developmental stage and the environment in which they live (Imamah et al., 2024). The implementation of Clean and Healthy Living Behaviors in schools plays a crucial role, considering that school-age children are a group vulnerable to various infectious diseases, particularly those related to personal and environmental hygiene (Rokhmah et al., 2023).

According to a 2024 World Health Organization (WHO) report, approximately 1.4 million people die each year due to inadequate drinking water, sanitation, and hygiene. The majority of these cases

occur in low- and middle-income countries. Of these deaths, approximately 564,000 are caused by unsafe sanitation, which is generally related to diarrheal diseases. Furthermore, according to the WHO report "Progress on Drinking Water, Sanitation, and Hygiene in Schools: 2000-2021 Data Update," a similar situation is also seen in educational settings. Approximately 1 in 5 schools worldwide still lacks basic drinking water services, while 2 in 5 schools do not provide handwashing facilities with soap and water in 2021.

Data from the Indonesian Ministry of Health shows that the implementation of Clean and Healthy Living Behaviors in schools remains relatively low, with only around 35.8% of schools having implemented it, far below the national target of 70%. Furthermore, based on the 2022 Elementary School Sanitation Profile cited by Grid Health (2023),

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approximately 71% of educational units, equivalent to 27 million children in Indonesia, still fall within the limited WASH (Water, Sanitation, and Hygiene) service category. Meanwhile, only 28% of schools have achieved basic WASH service.

The Lampung Provincial Health Office reported that the Clean and Healthy Living coverage in its region has reached 73.33%. A study at Sukamenanti 02 Elementary School in Bandar Lampung City found that out of 157 students, 144 (91.72%) demonstrated good clean and healthy living behaviors. However, several habits were found that did not align with CHLB indicators, such as 27.39% of students not washing their hands before eating, 26.75% not trimming their nails once a week, and 3.18% not washing their hands with soap after defecating (Susilo & Haryatmi, 2024).

Sanitation is an effort to maintain a healthy environment to prevent disease transmission. Implementing good sanitation is crucial in public places because they are areas where many people gather and, if not properly managed, can become a source of disease transmission (Abdillah, 2022). In school environments, sanitation facilities must meet health standards to create a clean, healthy, and safe learning environment. However, many schools still have limited access to basic sanitation, thus not optimally supporting the implementation of healthy lifestyles (Mulyadi et al., 2025).

Several previous studies have shown that school sanitation conditions are closely related to students' clean and healthy lifestyles (CHLB). In the *EduHealth Journal* analyzed environmental sanitation and CHLB in elementary schools in the Gunungpati area. The results showed that schools with good sanitation facilities tended to have students who were more disciplined in implementing clean behaviors, such as washing hands before eating and maintaining a clean school environment. This study emphasizes the importance of environmental sanitation as a key supporting factor in developing healthy behaviors in schools (Safitri, 2020; Kurniatillah et al., 2024).

A study in the *Abdimas Kesehatan (ADKES) Journal* also found that the implementation of CHLB among students at Panimbang 6 Elementary School was significantly influenced by the availability of sanitation facilities and the cleanliness of the school

environment. This study showed that clean toilets, clean water availability, and handwashing facilities were the main indicators encouraging students to adopt healthy behaviors in the school environment (Kurniatillah et al., 2024).

Although numerous studies have examined the relationship between sanitation and CHLB in schools, most have focused on elementary school and are descriptive in nature. Few studies have examined the relationship between the two at the junior high school level. Inadequate sanitation conditions can impact student adherence to CHLB.

Based on the pre-survey results, various poor CHLB behaviors were still frequently observed among students, including not washing hands with soap before eating or after using the toilet, and washing hands with only water without soap. Furthermore, some students litter, fail to flush the toilet after use, and store food in desk drawers, all of which have the potential to pose hygiene and health problems in the school environment.

Interviews with teachers also revealed that the school's sanitation conditions still face several challenges. Water flow is often obstructed in several areas, causing puddles and complicating efforts to maintain the school's cleanliness. This situation has the potential to reduce the comfort and quality of the environment. Despite the availability of basic facilities such as adequate air circulation, handwashing facilities, trash cans, and healthy living behavior patterns information boards, the overall school sanitation standards are still considered suboptimal. The selection of seventh-grade students as respondents in this study was based on the developmental characteristics of students who are in the early adolescence phase, namely the transition period from elementary school to junior high school (Cahyana et al., 2024). At this stage, students experience significant changes in behavioral, cognitive, and social aspects that greatly influence daily living habits, including clean and healthy living behavior patterns. This transition period is a crucial phase in the formation of habits and awareness of environmental cleanliness and the implementation of good sanitation, so that data obtained from this group can provide a more representative picture of the relationship between school sanitation conditions and

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DOI: <https://doi.org/10.56922/mchc.v5i6.07>

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healthy living behavior patterns practices in the junior high school environment.

RESEARCH METHOD

This study employed a quantitative analytical research design with a cross-sectional approach. The study was conducted at Junior High School 27 Bandar Lampung in 2025. The cross-sectional approach was used to examine the relationship between school sanitation and students' compliance with Clean and Healthy Living Behavior (CHLB) at a specific point in time.

The population in this study consisted of Grade VII students. The sample comprised 38 students from Grade VII A and VII B who met the predetermined inclusion criteria. Respondents were selected using purposive sampling based on the characteristics relevant to the objectives of the study.

The independent variable was school sanitation, while the dependent variable was students' compliance with CHLB. Data were collected using questionnaires that had been tested for validity and

reliability. The school sanitation questionnaire assessed the condition and availability of sanitation facilities in the school environment, while the CHLB questionnaire assessed students' compliance with clean and healthy living practices.

Data collection was conducted after obtaining permission from the relevant authorities and informed consent from the respondents and/or their parents or guardians, as required. Respondents were informed about the purpose and procedures of the study, and the confidentiality of their data was maintained throughout the research process.

Data were analysed using univariate and bivariate analysis. Univariate analysis was used to describe the frequency and percentage distribution of respondent characteristics, school sanitation, and CHLB compliance. Bivariate analysis was performed to examine the relationship between school sanitation and CHLB compliance using the chi-square test. Statistical significance was determined at a significance level of $p < 0.05$.

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RESEARCH RESULTS

Table Characteristics of Respondent (N=38)

Variable	Results	p-value
Age (Mean±SD) (Years) (Range)	(13.11 ± 0.45 (12–14))	
12 years	2/5.3	
13 years	30/78.9	
14 years	6/15.8	
Gender (n/%)		
Male	18/47.4	
Female	20/52.6	
Class (n/%)		
VII A	18/47.4	
VII B	20/52.6	
School Sanitation (n/%)		0.000
Good	4/10.5	
Poor	34/89.5	
CHLB Compliance (n/%)		
Comply	4/10.5	
Do not comply	34/89.5	

The table shows that, based on gender, there were more female respondents than male respondents. There were 20 female respondents (52.6%), while there were 18 male respondents (47.4%). In terms of age, the majority of respondents were 12 years old (2 respondents) (5.3%). There were 30 respondents aged 13 (78.9%), and 6 respondents aged 14 (15.8%). In terms of grade, there were 18 respondents from class VII A (47.4%). There were 20 respondents from class VII B (52.6%). Based on the results of the univariate analysis, it was found that the majority of respondents were in the good school sanitation category, namely 34 respondents (89.5%), while respondents in the poor school sanitation category were 4 respondents (10.5%). The results of the univariate analysis showed that there were 4 respondents (10.5%) who complied with CHLB in the non-compliant category, while there were 34 respondents (89.5%) who complied with CHLB in the compliant category.

Bivariate analysis was conducted to determine the relationship between school sanitation and CHLB compliance. The statistical test used was the chi-square test, as the data were ordinal and did not require a normal distribution. The chi-square test yielded a p-value of 0.000 ($p < 0.05$), thus concluding that there is a relationship between school sanitation and adherence to clean and healthy living behaviors (CHLB).

DISCUSSION

Based on the results of the univariate analysis, it was found that the majority of respondents were in the good school sanitation category (0 respondents), while 4 respondents (10.5%) were in the poor school sanitation category. Zero respondents were categorized as non-compliant with CHLB practices, while 34 respondents (89.5%) were compliant with CHLB practices.

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Schools are strategic places for education, empowerment, and cultural development, and are highly strategic for improving education and environmental health (Widyawati & Gunawan, 2021). Sanitation is an environmental health activity aimed at preventing the transmission of diseases that threaten human health. It is particularly important to implement in public places because public places are where people gather, sharing all their illnesses (Abdillah, 2022).

Health is everyone's right to carry out all daily activities. To live a healthy life, we must adopt clean and healthy living behaviors (CHLB). CHLB is a set of behaviors practiced consciously as a result of learning that enables an individual or family to help themselves in the health sector and play an active role in improving the health of their community (Akbar et al., 2023). This is in line with another research conducted on the influence of awareness of clean and healthy living behaviors (CHLB) on environmental sanitation in elementary schools in Tenayan Raya District. The results obtained indicate that CHLB awareness influences environmental sanitation, with a significance level of 0.000. The direction of the relationship in this study is positive ($r = 0.318$), meaning that the higher the CHLB awareness, the higher the environmental sanitation, and vice versa, the lower the CHLB awareness, the lower the environmental sanitation (Mulyadi et al., 2025).

This is in line with another research conducted on analysis of environmental sanitation conditions and clean and healthy living behaviors (CHLB) in public elementary schools in Gunungpati District. The results of the study showed that 50% of environmental sanitation was good and 50% was poor. Knowledge levels were good at 73% and poor at 27%, attitudes were good at 60% and poor at 40%, and actions were good at 56% and poor at 44%. There was a correlation between knowledge and action (p -value 0.011), and there was a correlation between attitudes and actions (p -value 0.05) (Safitri, 2020). According to Lawrence Green (1980), individual and community health behavior is determined by two main groups of factors: behavioral factors (behavior causes) and non-behavioral factors (non-behavioral causes). In its implementation, the precede-proceed model is applied in an integrated

manner through the planning, implementation, and evaluation stages. The precede stage is used to diagnose problems, set priorities, and formulate program objectives. Meanwhile, the proceed stage is used to determine targets, policies, as well as criteria for implementing and evaluating health programs (Romadhon et al., 2024).

Cleanliness and sanitation are physical factors in the school environment that play a crucial role in supporting student health and the quality of the learning process. School cleanliness encompasses not only the tidiness of classrooms, yards, and public facilities, but also encompasses environmental management that is free from trash, dust, and potential sources of disease. Unclean school conditions can trigger the spread of various infectious diseases, directly impacting student health and disrupting learning activities. Inadequate sanitation, such as dirty toilets, clogged drains, unorganized waste disposal, and limited availability of clean water, can become breeding grounds for bacteria, viruses, and other disease vectors. This situation increases the risk of health problems in students, such as diarrhea, respiratory infections, skin diseases, and other environmental health problems (Kurnianingsih et al., 2023).

Based on the results of statistical tests using the chi-square test, a p -value <0.05 was obtained, indicating a significant relationship between school sanitation and adherence to Clean and Healthy Living Behaviors (CHLB) among grade VII A and VII B students at Junior high school 27 Bandar Lampung in 2025. The positive correlation indicates that the better the school sanitation conditions, the higher the level of student compliance in implementing CHLB. Therefore, the alternative hypothesis (H_a) stating a relationship between school sanitation and CHLB compliance is accepted. Environmental health is the effort to control all factors in the human physical environment that are expected to cause harm to physical development, health, or survival. Therefore, environmental sanitation is necessary, which is an effort to achieve a healthy environment by controlling physical environmental factors that have a detrimental impact on physical development, health, and human survival (Winarti, 2020).

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CHLB (Healthy Living Environment) is a series of individual behaviors that include personal hygiene, sanitation, handwashing practices, hygienic food choices, and the implementation of a healthy lifestyle. The implementation of CHLB plays a crucial role in preventing various health problems (Nai et al., 2025). Cleanliness and sanitation are physical factors in the school environment that play a crucial role in supporting student health and the quality of the learning process. School cleanliness encompasses not only the tidiness of classrooms, yards, and public facilities, but also encompasses environmental management free of trash, dust, and other potential sources of disease. Unsanitary school conditions can trigger the spread of various infectious diseases, directly impacting student health and disrupting learning activities. Inadequate sanitation, such as dirty toilets, clogged drains, unorganized waste disposal, and limited availability of clean water, can become breeding grounds for bacteria, viruses, and other disease vectors. This situation increases the risk of health problems in students, such as diarrhea, respiratory infections, skin diseases, and other environmental health problems (Kurnianingsih et al., 2023).

In line with another research conducted Implementation of clean and healthy living behaviors in students of Panimbang 6th State Elementary School in Pandeglang Regency. Research conducted on 119 students showed that good handwashing habits were 68.9%, the availability and utilization of healthy canteens was poor (60.5%), the availability and utilization of healthy latrines was good (87.4%), good exercise habits were good (89.9%), the eradication of mosquito larvae was poor (52.1%), the smoke-free environment was good (100%), proper weight measurement and weighing was good (85.7%), and proper waste disposal was good (53.8%). The cooperation and active participation of all school members in maintaining clean and healthy living habits is essential (Kurniatillah et al. 2023).

Clean and healthy living habits are a crucial issue and a focus for preventing various health problems in children. Health problems among elementary school-aged children are still common due to their

susceptibility to various diseases, particularly those related to digestion, such as diarrhea, worms, and other digestive disorders (Rosa et al., 2019). Health is everyone's right to carry out all daily activities. To live a healthy life, we must adopt clean and healthy living behaviors (CHLB). CHLB is a set of behaviors consciously practiced as a result of learning that enables an individual or family to help themselves in the health sector and play an active role in improving the health of their community (Akbar et al., 2023). Environmental health is the effort to control all factors in the human physical environment that are expected to cause harm to physical development, health, or survival. Therefore, environmental sanitation is necessary, which is an effort to achieve a healthy environment by controlling physical environmental factors that have a detrimental impact on physical development, health, and human survival (Winarti, 2020).

CONCLUSION

This study found that most Grade VII A and VII B students at SMPN 27 Bandar Lampung were classified as having poor school sanitation and were not compliant with Clean and Healthy Living Behavior (CHLB). The statistical analysis demonstrated a significant association between school sanitation and CHLB compliance ($p < 0.05$). These findings indicate that improving the school sanitation environment may be important in supporting students' implementation of healthy living behaviours. However, the cross-sectional design does not permit causal conclusions.

SUGGESTION

Schools are encouraged to improve sanitation facilities, particularly clean water access, handwashing facilities, toilets, drainage, and waste-management facilities. Continuous health education and supervision should also be provided to strengthen students' compliance with Clean and Healthy Living Behavior. Future studies should consider larger samples, multiple schools, and longitudinal or intervention designs to further examine the relationship between school sanitation and CHLB compliance.

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