



The Effect of Health Literacy on Environmental Hygiene Behavior Among Adolescents in Secondary Schools

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ABSTRACT

Environmental hygiene behavior among adolescents is an important indicator in public health promotion and prevention efforts. However, the low level of awareness among adolescents regarding maintaining school environmental hygiene remains a common problem. Health literacy plays a role in enhancing individuals' ability to understand, evaluate, and apply health information, thereby influencing environmental hygiene behavior. This study aims to analyze the influence of health literacy on environmental hygiene behavior among adolescents in secondary schools. This study uses a quantitative design with a cross-sectional approach. The respondents were Bhakti Mulia Vocational High School, Kediri selected using simple random sampling (n=113). Data were collected using a structured questionnaire that measured health literacy and environmental hygiene behavior. Data analysis was performed using the Pearson product-moment correlation test. The results showed that most respondents had moderate to high levels of health literacy, as well as fairly good environmental hygiene behavior. There is a significant association between health literacy and environmental hygiene behavior ($r=0.512$; $p < 0.05$), such that higher health literacy is associated with better environmental hygiene behavior. Health literacy is significantly associated with influences environmental hygiene behavior among adolescents. Efforts to improve health literacy through structured education in schools are needed to support clean and healthy living behaviors.

Introduction

Adolescents are an age group undergoing a critical transitional phase in the life cycle, characterized by significant physical, psychological, and social changes

(Sawyer et al., 2021). During this phase, adolescents begin to develop habits and behaviors that will influence their health status in adulthood (World Health Organization, 2021). The school

environment is one of the key factors in shaping adolescents' health behaviors, including environmental hygiene (UNICEF, 2021). Health behaviors established during adolescence tend to persist and have a long-term impact on an individual's quality of life (Nutbeam, 2017). Therefore, health interventions targeting adolescents are a key focus of public health promotion and prevention efforts (Okan et al., 2022).

Environmental hygiene practices are part of a clean and healthy lifestyle and play a crucial role in preventing environmentally-related diseases (Kemenkes, 2022a). However, various studies indicate that environmental hygiene practices among adolescents remain relatively low, particularly in school settings (Prihanto et al., 2021). A lack of awareness about maintaining hygiene can increase the risk of infectious diseases such as diarrhea, respiratory infections, and skin conditions (World Health Organization, 2021). In addition, an unclean environment can also affect students' comfort and learning process (UNICEF, 2021). Therefore, improving environmental hygiene practices is a key aspect of school health programs (Kemenkes, 2022a). In an interview with 10 teenagers at Bhakti Mulia Vocational High School, it was found that 6 of them were unaware of healthy and hygienic living practices, they were only aware of handwashing.

One factor that influences health behavior is health literacy. Health literacy is defined as an individual's ability to access, understand, evaluate, and use health information to make informed decisions. A high level of health literacy encourages individuals to adopt healthy lifestyle habits in their daily lives (Ayaz-Alkaya et al., 2024). For adolescents, health literacy is a key factor in fostering positive health behaviors, including environmental hygiene (Okan et al., 2022). Thus, health literacy is a key determinant in improving public health (Nutbeam, 2017).

Various studies show that health literacy is significantly associated with health behaviors among adolescents. Adolescents with high levels of health literacy tend to exhibit better behaviors in maintaining personal and environmental hygiene (Dülger & Ayaz-Alkaya, 2024). Health literacy also plays a role in improving decision-making skills and raising awareness of the importance of health. Furthermore, health literacy-based interventions have been shown to be effective in improving adolescents' health behaviors across various settings (Susilo, 2019).

The impact of health literacy on environmental hygiene behaviors among adolescents remains limited. Most studies tend to focus on general health behaviors such as nutrition, physical activity, and mental health. In fact, environmental hygiene is a key component of public health that has a direct impact on disease incidence (Ajingga et al., 2025). The limitations of this study indicate a research gap that needs to be addressed. Therefore, this study was conducted to analyze the influence of health literacy on environmental hygiene behavior among adolescents in secondary school.

Method

This study employed a quantitative design with a cross-sectional approach, in which measurements of the independent variable (health literacy) and the dependent variable (environmental hygiene behavior) were taken at the same time. This design was chosen to determine the relationship and influence between variables within a single observation period without intervention. The respondents were Bhakti Mulia Vocational High School, Kediri selected using simple random sampling (n=113) in January 2026. The population in this study consisted of all adolescent students at the secondary school serving as the study site. The sample was selected using simple random

sampling, taking into account inclusion and exclusion criteria. Inclusion criteria included adolescents aged 12–18 years who were willing to participate and present during data collection. Exclusion criteria were respondents who did not complete the questionnaire in full.

The sample size was determined using the Slovin formula, resulting in 113 respondents, with the margins error 5%. The variables in this study consist of an independent variable—health literacy—and a dependent variable—environmental hygiene behavior. The operational definition of the health literacy variable is adolescents’ ability to access, understand, evaluate, and use health information. It was measured using a Likert scale questionnaire with low, moderate, and high categories. The environmental hygiene behavior variable refers to adolescents’ actions in maintaining school environmental hygiene, such as disposing of trash properly, keeping classrooms clean, and participating in hygiene activities. It was measured using a Likert scale questionnaire with poor, adequate, and good categories. Data were collected by distributing questionnaires directly to respondents at the school.

The questionnaire items underwent validity and reliability testing, with the results showing that each item was valid, as indicated by a calculated *r* value greater than 0.05 and a Cronbach’s alpha value greater than 0.70. Before completing the questionnaire, respondents were given an explanation of the research objectives and asked to sign an informed consent form. It took 10 minutes to complete the questionnaire, which was distributed directly to the respondents. The research data analysis consisted of univariate, normality test and bivariate analyses using Pearson’s Product-Moment correlation test.

Results and Discussion

Table 1. Distribution of Respondents by Gender and Age (n=113)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	48	42.5
	Female	65	57.5
Age	16 years	25	22.1
	17 years	52	46.0
	18 years	36	31.9

According to Table 1, the majority of respondents were female, totaling 65 people (57.5%), while males numbered 48 (42.5%). In the 17-year-old age group, there were 52 respondents (46.0%), followed by 36 respondents (31.9%) in the 18-year-old age group, and 25 respondents (22.1%) in the 16-year-old age group.

Table 2. Results of the Pearson Product-Moment Correlation Test between Health Literacy and Environmental Hygiene Behavior (n=113)

Variable	Perason's r	p-value	Description
Health Literacy and Environmer Hygiene Practices	0.512	0.000	Significant (moderate)

Based on Table 2, the results of the Pearson correlation test show a correlation coefficient (*r*) of 0.512 with a *p*-value of < 0.001 (*p* < 0.05). This indicates that there is a significant relationship between health literacy and environmental hygiene behavior among adolescents. A correlation coefficient of 0.512 indicates a moderate strength of relationship with a positive direction, meaning that the higher the level of health literacy, the better the environmental hygiene behavior among adolescents.

The results of the univariate analysis show that the majority of respondents were female, which is consistent with studies indicating that women tend to be more

involved in health research and have higher health awareness than men (Viner et al., 2022). Women are also reported to have better preventive habits when it comes to maintaining environmental health (Kemenkes, 2022b). In addition, the age distribution is dominated by middle-adolescents, a critical phase in the development of healthy habits (World Health Organization, 2021). At this stage, adolescents begin to develop the ability to think abstractly and rationally when processing health information (Manganello, 2020). The results of the bivariate analysis indicate a significant association between health literacy and environmental hygiene behaviors among adolescents (Fleary et al., 2020). A correlation coefficient in the moderate range indicates that health literacy plays a significant role in shaping health behaviors (Sørensen et al., 2021). A positive correlation indicates that improvements in health literacy are associated with improvements in environmental hygiene behaviors. These findings are consistent with health behavior theory (Hi Bloom Theory), which states that knowledge and understanding form the foundation for individual behavioral change (Glanz et al., 2015). Thus, health literacy can be an effective strategy for improving environmental hygiene behaviors among adolescents (UNESCO, 2021).

These findings are also supported by previous studies showing that health literacy is associated with healthy lifestyle behaviors among adolescents (Bröder et al., 2019). Teenagers with good health literacy tend to be better able to access and understand health information (Manganello, 2020). These skills will raise awareness of the importance of maintaining a clean environment (Sørensen et al., 2021). In addition, health literacy also plays a role in improving decision-making skills related to health (Fleary et al., 2020). Therefore, improving health literacy should be a priority in school health promotion programs.

Although the association found was of moderate strength, this suggests that other factors also influence environmental hygiene behavior (World Health Organization, 2022).

Social environmental factors such as family, peers, and culture play a significant role in shaping adolescent behavior (Viner et al., 2022). In addition, the availability of sanitation facilities and school policies also influence environmental hygiene behaviors. A supportive environment makes it easier for adolescents to adopt clean and healthy living habits (UNESCO, 2021). Therefore, a comprehensive and integrated approach is needed to improve environmental hygiene practices among adolescents.

Conclusion

Based on the research findings, it can be concluded that the majority of respondents were adolescent girls. Health literacy levels among adolescents fell into the moderate-to-high category, while environmental hygiene behaviors were classified as fairly good. Bivariate analysis results indicate that there is a significant association between health literacy and environmental hygiene behaviors among adolescents (UNESCO, 2021).

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This indicates that the higher the level of health literacy, the better adolescents' environmental hygiene behaviors. Health literacy is a key factor in shaping adolescents' awareness, understanding, and practices regarding environmental hygiene. Therefore, efforts are needed to improve health literacy through structured and sustained education in school settings. A school-based approach is expected to promote clean and healthy living behaviors and optimally support adolescents' health. Practical recommendations could be added curriculum integration, UKS programs, health literacy-based education about hygiene behaviors.

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