

Short Communication

Water, Sanitation, and Hygiene in Indonesia School: Facilities and Infrastructure Availability



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ABSTRACT

Background: One of the sustainable development goals (SDGs) is universal access to clean water and basic sanitation by 2030. Water, sanitation, and hygiene (WASH) support SDG targets such as eliminating poverty and improving health and education.

Methods: The sample of this study amounted to 30 schools consisting of 10 elementary schools, 10 junior high schools, and 10 senior high schools. Sampling was based on stakeholder decisions on several issues related to washing.

Results: This study was conducted by directly observing schools regarding the amount of drinking water, number of toilets, bathrooms, handwashing facilities alone, and handwashing facilities with water and soap. The results showed that elementary and junior high schools have insufficient toilet facilities and low handwashing facilities with water and soap. The average number of handwashing facilities with water and soap in schools in Bekasi City, Indonesia, was 1 for elementary schools, followed by junior high schools and high schools for 4-5 points.

Conclusion: As soap is still unavailable in many Bekasi City schools, and there are inadequate handwashing facilities, it is recommended that handwashing facilities must be available with soap and water.

Keywords: Facility, Toilet, Handwashing, Drinking water, Wash, School, Infrastructure

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Introduction

Water, sanitation, and hygiene (WASH) data in Indonesia shows that the condition of access to improved water sources is relatively high. The national average for access to improved water sources is 81%. Access to functioning latrine facilities separate for men and women is insufficient. The national average for functioning latrine facilities separated between males and females is 27%. A total of 43.5 million Indonesian children lack access to any or a combination of essential drinking water, sanitation, and hygiene services in their education units. The gap in access to hygiene facilities in education units is still very high. In urban areas, almost 1 out of 2 education units (49%) have access to soap and running water for handwashing.

In contrast, in rural areas, about 3 out of 8 schools, or 36%, have access to hand hygiene. Almost 1 out of 2 primary schools (46%), or 65945 primary schools, lack access to hand hygiene facilities. This number equates to nearly 15 million primary school students across Indonesia without access to handwashing with soap and running water [1].

In 2020, families in Bekasi City could access proper sanitation facilities (healthy latrines), which was 81.09%. This percentage decreased compared to 99.24% in 2019. Most families use the permanent healthy latrine type, 57% or 353890 household users. A total of 247918 families use permanent semi-healthy latrines, and the remaining 3% (22334 user households) use communal/shared latrines. Meanwhile, drinking water facilities are still in the low and medium risk categories, as much as 77.30%. This figure decreased from 2019, when drinking water facilities with low and medium risk were 88.58% [1]. Contaminated drinking water can cause morbidity and mortality, especially in low- and middle-income countries [2-4].

Hand hygiene is one of the WASH components, which is very important in protecting children, adolescents, and adults from potential infectious diseases, especially through contact with people and objects [5]. In addition, hand washing is a prerequisite for growth and development [6]. The transmission of infectious diseases among school-attending children is such that hand hygiene with water and soap is essential to reduce illness-related absenteeism [7] (Figure 1). It is the most effective process and is considered a key step to reduce the potential transmission of infection through contact with people and ob-

jects [8]. WASH in primary schools is still a problem in Indonesia. Data from the school sanitation profile (2020) shows that 1 out of 5 schools lack access to proper water. Also, 73% of schools lack access to proper sanitation; 3 out of 5 schools lack access to proper hygiene, and 1 out of 3 schools lack a separate toilet. Therefore, there needs to be several approaches or tools in achieving the sustainable development goals (SDGs) 2030 target, namely ensuring the availability of clean water and sustainable sanitation for all people and 100% access to safe drinking water. The first approach is to increase cooperation with several government stakeholders, private sector, and non-governmental organizations regarding school WASH, the need to accelerate the fulfillment of the availability of school sanitation facilities and infrastructure, the need to strengthen the monitoring and evaluation system regarding sanitation conditions in schools that are carried out regularly, and the design of school WASH models with increased leadership from the education sector which is strengthened by making supportive policies. WASH's sustainability dimensions of funding and institutional arrangements are essential to contributing to sanitation services [9]. In 2014, the Government of India (GoI) launched the "Swachh Bharat" (clean India) program, which aims to monitor and evaluate WASH activities in schools. It lacks a budget, data system, poor monitoring system, inadequate and non-functional WASH facilities, poor maintenance, and poor handwashing behavior to support WASH in schools [10].

Clean water and proper sanitation are basic human needs. One of the environmental sector's SDGs is ensuring people achieve universal access to clean water and sanitation [9]. Until now, Indonesia's sanitation coverage rate in urban areas is low compared to other ASEAN countries. Research related to WASH is still rarely conducted, especially at the school level, which has a high disease transmission level. Therefore, collecting data on WASH in schools by comparing elementary, junior, and senior high school education levels in Bekasi City is necessary. It is expected to provide real intervention implementation and policies for stakeholders in making decisions.

Methods

This study used a cross-sectional design with a [Google Form](#) approach to observe the availability of WASH facilities and infrastructure in schools consisting of the number of drinking water, number of toilets, number of bathrooms, number of handwashing facilities, and number of handwashing facilities with water and soap. The study was conducted in 30 schools in Bekasi City, In-

donesia, consisting of 10 elementary schools, 10 junior high schools, and 10 senior high schools. Sampling was based on stakeholder decisions on several issues related to washing. The observation stage was carried out using a checklist form; interviews were conducted with representatives of teachers at the school, and finally, focus group discussions by inviting the principal/person in charge of WASH at school related to how the planning, implementation, monitoring, and curriculum process at school. The results of the observations were analyzed descriptively by frequency to describe the availability of WASH facilities in schools.

Results

Based on Table 1, the Mean±SD Wash score for drinking water points in Bekasi City was 4.2±1.6865 for elementary schools, 7.8±4.4171 for junior high schools, and 12±13.8323 for senior high schools. The Mean±SD Wash score for toilets in Bekasi was 2.6±0.966 for elementary schools, 5.8±2.044 for junior high schools, and 7.8±3.084 for senior high schools. The Mean±SD Wash score for bathing areas in Bekasi City was 2.6±1.075 for elementary schools, 6±2.357 for junior high schools,

and 8.6±5.103 senior high schools. The Mean±SD Wash score for handwashing facilities was 3.2±2.658 for elementary schools, 7.3±3.917 for the junior high schools, and 7.6±4.949 for the senior high schools. The Mean±SD Wash score for handwashing facilities with water and soap was 1.3±1.947 for elementary schools, 4.8±4.492 for junior high schools, and 4.9±3.665 for senior high schools.

Discussion

School sanitation is one of the sustainable development goals. The purpose of school sanitation is to improve the quality of education [11]. School sanitation is one of the essential elements in improving the quality of health and comfort of students in schools, which can directly and indirectly contribute to increasing the rate of school participation. Based on the 2020 school sanitation profile data, 1 out of 5 schools lack access to clean water, 73% of schools do not have access to sanitation, 3 out of 5 schools lack access to proper hygiene, and 43.5 million schools do not have access to clean water, sanitation, and hygiene [1]. School sanitation consists of 3 main pillars:

Table 1. Overview of wash in Bekasi City schools

Variables	School Type	Min	Max	Mean	SE	SD	Variance
Number of drinking water points	Elementary school	2	7	4.2	0.5333	1.6865	2.844
	Junior high school	0	15	7.8	1.3968	4.4171	19.511
	Senior high school	4	50	12	4.3742	13.8323	191.333
Number of toilets	Elementary school	1	4	2.6	0.340	1.075	1.156
	Junior high school	2	8	5.8	0.646	2.044	4.178
	Senior high school	3	12	7.8	0.975	3.084	9.511
Bathing areas	Elementary school	2	4	2.6	0.306	0.966	0.933
	Junior high school	2	10	6	0.745	2.357	5.556
	Senior high school	3	20	8.6	1.614	5.103	26.044
Number of handwashing facilities	Elementary school	0	7	3.2	0.841	2.658	7.067
	Junior high school	0	15	7.3	1.239	3.917	15.344
	Senior high School	4	20	7.6	1.565	4.949	24.489
Number of handwashing facilities with water and soap	Elementary school	0	6	1.3	0.616	1.947	3.789
	Junior high school	0	15	4.8	1.420	4.492	20.178
	Senior high school	0	10	4.9	1.159	3.665	13.433





Figure 1. Water, sanitation, and hygiene integration in schools



Facilities, sanitation management, and clean and healthy living behavior [12] (Figure 2).

Based on the observations made by the research, the highest number of facilities was found at the high school level. Most facilities had a drinking water variable of 12. This finding aligns with some research results [13]; as many as 14% of the first high school education do not have proper drinking water facilities. Access to basic water facilities at the high school level is higher in urban areas (93%) than in rural areas (78%). An observation of the number of toilets in schools in Bekasi City, Indonesia, conducted at the elementary, junior high, and senior high school levels, found that senior high schools had 7-8 toilets. Some schools were found to have dirty and smelly toilets. Dirty and smelly school toilets can cause disease transmission among school

students. Among them are diarrhea, dengue fever, typhoid, dysentery, and some urinary tract diseases [14]. These diseases are caused by bacteria and viruses that breed in dirty and smelly toilet conditions. Another toilet health issue is the lack of ventilation and lighting. The average school toilet in Indonesia is wet [15], so circulation is poor, and bacteria and fungi quickly breed in toilets with limited lighting. Based on the researcher's observation, the toilet is close to the teacher's room, classroom, and other rooms. This condition can facilitate the transmission of disease to students. To prevent the spread of disease, water reservoirs in toilets must also be free of disease vectors such as mosquito larvae [16]. School toilets can have the highest potential for disease transmission and spread if not cleaned properly. Transmission does not only come from the virus but also through splashes of water from flushing toilets.

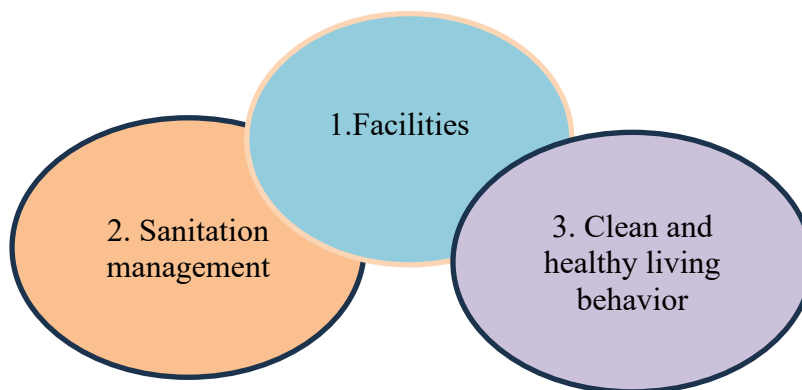


Figure 2. Water, sanitation, and hygiene pillars in schools



The average number of bathing areas owned by schools in Bekasi City for elementary schools is 2-3, junior high schools 6, and senior high schools 8-9. The bathing area in the school environment plays a vital role for students who go to school from morning to evening. The growth and development of students at school is not only based on good education but must also be supported by proper and good sanitation conditions [17]. A good environment can provide positive and negative experiences related to color, shape, and smell. This finding aligns with the observations obtained in the field, which show that the interaction in teaching and learning is good for students with good sanitary baths. Also, it affects the psychology and mood of the student in learning.

The average number of handwashing facilities owned by schools in Bekasi City for elementary schools is 3, junior high schools, 7, and high schools, 7-8. The average number of handwashing facilities with water and soap owned by schools in Bekasi City for elementary schools is 1, junior high schools, 4-5, and high schools, 4-5. One of the WASH practices is the availability of handwashing facilities owned by each school [18]. Hand washing is one of the clean and healthy behaviors that must be taught to students, especially elementary school students. Especially after pandemic conditions, maintaining health protocols must still be used in the school environment. Based on the Indonesian Minister of Health letter No. 1429/SK/XII/2006, there must be hand-washing facilities in the school environment. Based on observations, hand washing facilities at the elementary schools have the least facilities compared to junior and senior high schools. Suppose the school does not provide handwashing facilities in every classroom. In that case, the solution that can be given is to provide handwashing facilities with a larger size or provide handwashing facilities close to the canteen area. Because most students visit the canteen for snacks and meals, as one of the efforts to prevent disease transmission, every school needs hand washing facilities with soap and running water so that students can wash their hands before and after eating [19].

Conclusion

The condition of WASH in schools is related to the availability of facilities, which is still inadequate; this condition is associated with the lack of handwashing facilities with water and soap the number of bathrooms and toilets that are not proportional to the number of students. The insufficient and inadequate school infrastructure hinders students from practicing clean and healthy living habits, especially handwashing with soap. Sanitation, facilities, and hygiene need to be introduced to students early on in school so that

students have a healthy character and good hygiene behavior habits. This condition can also form a healthy and clean school environment to improve students' health status.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Committee of Universitas Esa Unggul (Code: 0923-08.036/DPKE-KEP/FINAL-EA/UEU/VIII/2023).

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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