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IDENTIFICATION OF A COMPREHENSIVE HEALTHY SCHOOL MODEL IN THE PREVENTION OF DIARRHEAL DISEASE IN ELEMENTARY SCHOOLS

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A B S T R A C T

Diarrhea is a disease that is often suffered by children and toddlers, where one of the factors is influenced by the environment and hygiene behavior. The incidence of diarrhea in Jambi City has increased every year, so it is necessary to identify the implementation of the Comprehensive Health School Model (CHSM). Identifying the implementation of CHSM can help identify how the implementation of diarrhea prevention in schools. The purpose of this study was to identify the implementation of CHSM for the prevention of diarrhea in elementary schools in Jambi City. This research is a descriptive observational study. The samples in this study were 13 public elementary schools in Jambi City. The results of the study from 3 CHSM assessment criteria, it is known that the physical environment criteria (clean water facilities meet the requirements (69.2%), latrine facilities on average meet the requirements (69.2%), most of the primary schools waste water disposal facilities do not meet the requirements (76.1%), and most of the waste disposal facilities meet the requirements (92.3%)), teaching and learning criteria more than half of primary schools (53.8%) are appropriate and implement teaching and learning about healthy schools, sanitation and clean and healthy living behavior in schools, school policy criteria are known that most schools already have and implement policies on healthy schools. The principal in a school has a very important role and responsibility in managing the school in terms of academic and non-academic matters, especially in providing maintenance on school sanitation facilities. Sanitation management involves all school members and related parties, such as committee members, parents of students, and other interested parties. Good sanitation management improves the school community's ability to utilize a clean, healthy and beautiful school environment.

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INTRODUCTION

Environment-based diseases are a common health problem in developing countries. Lack of public awareness about the importance of environmental sanitation and difficult access to health facilities make it easy for diseases to emerge and develop. One of the environment-based diseases is diarrhea (1). Diarrhea is a disease that is often suffered by children and toddlers, where one of the factors is influenced by the environment and hygiene behavior. Diarrhea can also be caused by the lack of habit of washing hands with soap. The incidence of diarrhea in children aged 6-14 years in Jambi City based on data from the Jambi City Health Office in 2020 was recorded at 707 cases, then increased in 2021 to 872 cases and decreased in 2022, namely 577 cases (2).

School-age children are still vulnerable to gastrointestinal diseases such as diarrhea. Epidemiologically, the transmission of environment-based diseases in school-age children is still in the high category, especially in infectious diseases such as diarrhea (3). Diarrheal diseases are still a public health problem in developing countries. This can be seen in the high morbidity and mortality in children caused by diarrheal diseases. As many as 1.6 million people in the world die each year due to diarrhea, a quarter of whom are children (4). The impact of diarrhea on children will affect physical (nausea, vomiting, abdominal pain), mental and academic performance (5).

School-age children, especially elementary school students, tend to ignore Clean and Healthy Living Behavior if unsupervised. The age of elementary school children is different from adults who already understand the importance of PHBS. Elementary school students need strict supervision in carrying out PHBS (6). This is supported by the results of research showing that there is a significant relationship between knowledge about PHBS and the incidence of diarrhea (p-value 0.001) and there is a relationship between attitudes about PHBS and the incidence of diarrhea (p-value 0.001). Prevention of diarrhea transmission needs to be done to improve school preparedness in preventing the occurrence of diarrhea in schools.

The identification of diarrheal disease prevention in primary schools (SD) using the *Comprehensive Health School Model* (CHSM) approach has never been studied. If schools are healthy, students will learn better and have a healthier education. Protection for children and supporting facilities in educational institutions is very important. Vigilance is needed to prevent the possible spread of diarrhea in schools. CSHM or Comprehensive Healthy School Model which takes an internationally recognized support approach to improving student educational outcomes while addressing school health in a planned, integrated and holistic manner. The model addresses four components namely Social and physical environment, Teaching and learning, Healthy school policies and Partnerships (7).

Comprehensive School Health Model (CSHM) or Comprehensive Healthy School Model where in conducting internationally recognized support approach improves student educational outcomes while addressing school health in a planned, integrated and holistic manner (8,9). The model addresses four components namely Social and physical environment, Teaching and learning, Healthy school policies and Partnerships and services (10).

Preliminary studies were conducted on 15 fourth and fifth grade students in 5 elementary schools in Jambi City related to PHBS with indicators that students always wash their hands when snacking as many as 3 students, 8 students always wash their hands with running water, 2 students often wash their hands with soap. For latrine use behavior consists of 4 students sometimes urinating carelessly, 9 students sometimes do not flush the latrine cleanly after urinating. While the behavior of disposing of garbage is 4 students always throw garbage in its place, 11 students sometimes litter if the trash can is far away. Based on this background, the researcher wants to examine "Identification of the Implementation of the *Comprehensive Health School Model* (CHSM) for the Prevention of Diarrheal Disease in Elementary School Students in Jambi City.

METHOD

This research is a descriptive observational study, with data collection and direct observation at the research location, which was conducted to describe the condition of basic sanitation in the environment of public elementary schools in Jambi City. This research was conducted at 13 primary schools in Jambi City, Jambi City. Computerized data processing using statistical software through the stages of editing, coding, entry and data cleaning. Data analysis is the process of systematically searching and compiling data obtained from interviews, field notes, and documentation, to obtain conclusions that can be understood. The data analysis used is univariate data analysis, which means that researchers interpret the variables studied using tables and narratives. The results of the study are in the form of criteria for the physical environment of the school, teaching and learning, and school policies (11).

This study began with the provision of an *informed consent* sheet, a research recommendation letter from the Jambi City Education Office and a research assignment letter from the Dean of the Faculty of Medicine and Health Sciences, Jambi University to the Principal as a sign of approval to conduct research. Furthermore, researchers conducted research on the condition of basic sanitation facilities, healthy school assessment and PHBS of elementary school students which included clean water supply facilities, latrines, waste disposal facilities, and waste water disposal facilities in public elementary schools in Jambi City (13 elementary schools).

Research instruments are tools or facilities used by researchers in collecting data to make their work easier and the results better. Research instruments are made based on theoretical studies (12). The steps for compiling research instruments are identifying research variables, describing these variables into each indicator, formulating each indicator into instrument items. In this study there were 3 instruments, namely: (1) closed questionnaire (school sanitation); (2) interview (healthy school); and (3) documentation (13). The validity of the instrument in this study was measured using content validity, namely before the research instrument was used to collect data, it was consulted first to get consideration (expert judgment). The expert judgment in this study was the supervisor. The consideration of this expert judgment is to find out whether the meaning of the sentences in the question items can be understood by the respondents and describe the indicators on each change (14).

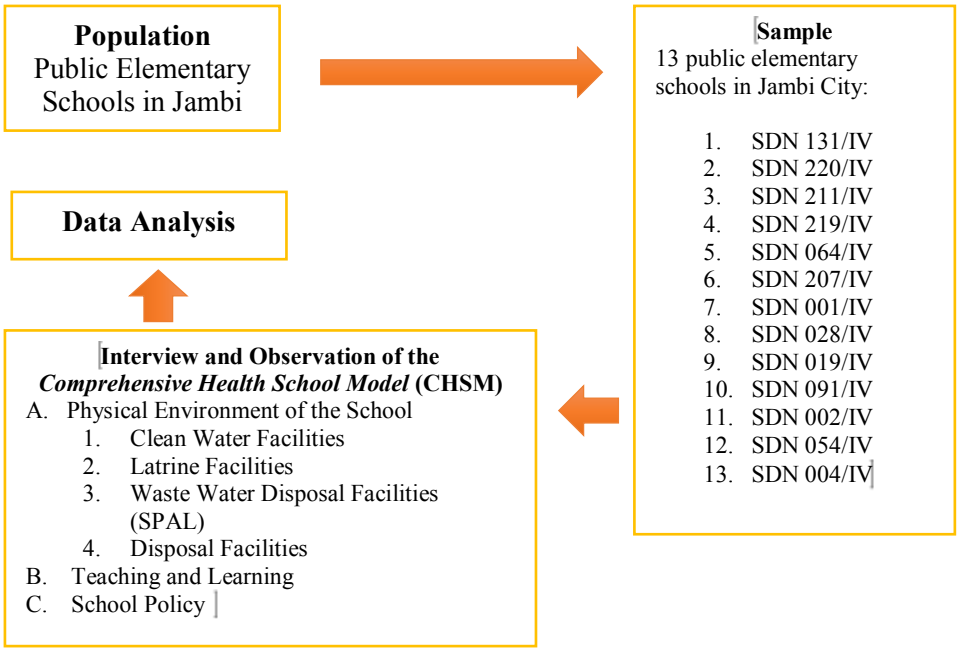

Figure 1. Research Implementation Process

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RESULTS AND DISCUSSION

Jambi City as one of the developing cities consists of 11 sub-districts. In each sub-district there are several elementary schools, both public elementary schools and private elementary schools. In Jambi City there are 253 elementary schools consisting of 214 public elementary schools and 39 private elementary schools spread across several sub-districts in Jambi City.

Elementary schools in Jambi City that have an average value meet health requirements 84.19%. Telanaipura sub-district has the highest sanitation value of 92% of the 25 schools. Pelayangan sub-district has 6 schools, which have the lowest sanitation score of 66.66%. The school sanitation assessment is conducted annually by a team of coaches from the Provincial Health Office. In 2018, one of the public elementary schools was selected as the first champion of healthy schools at the city level, SDN 216/IV.

Implementation of the Comprehensive Health School Model (CHSM) for Diarrhea Prevention

Table 1. Implementation of the Comprehensive Health School Model (CHSM)

Indicator	Yes		No	
	f	%	f	%
Clean Water Facilities				
Clean water available (15L/person/day)	13	100	0	0
The distance between wells/clean water facilities and pollution sources (waste water disposal facilities, septic tanks, final waste disposal sites) is at least 10 m	10	76,9	3	23,1
Water is colorless, odorless and tasteless	9	69,2	4	30,8
Toilet Facilities				
The location of the toilet is separate from the classroom, UKS room, teacher's room, library, guidance and counseling room	12	92,3	1	7,7
There are separate toilets for men and women	11	84,6	2	15,4
The proportion of toilets/urinals is 1 toilet/urinal for 40 students and 1 toilet for 25 female students	3	23,1	10	79,9
The toilet must be clean and odorless	10	79,9	3	23,1
The toilet floor is not slippery and there are no puddles of water	13	100	0	0
There are slogans/posters/warnings to maintain cleanliness	12	92,3	1	7,7
Hand washing soap is available	13	100	0	0
The water reservoir is drained at least once a week	11	84,6	2	15,4
Use disinfectant to clean the floor and closet/WC/urinal	13	100	0	0
There is an ventilation hole that leads to the outside of the toilet	12	92,3	1	7,7
Water reservoirs do not become breeding places for mosquitoes	13	100	0	0
Waste Water Disposal Facilities				
There is a waste water drainage channel	9	69,2	4	30,8
Separate Channel with rainwater drain	5	38,5	8	61,5
SPAL is watertight, closed and can flow smoothly	3	23,1	10	76,9
Discharged through a septic system and absorbed into the soil	0	0	13	100
Has a tub control so it is easy to clean	0	0	13	100
Waste Disposal Facilities				
In each room there is a rubbish bin equipped with a lid	4	30,8	9	69,2
Temporary waste collection points (TPS) are available from all rooms to facilitate the transportation or disposal of waste	13	100	0	0
Placement of temporary waste disposal/collection areas with classrooms at a minimum distance of 10 m	12	92,3	1	7,7

Source: Primary Data, 2024

Clean water facilities are very necessary for daily activities at school. Hand washing activities, washing after urinating and defecating are also needed to clean classrooms. Based on the research results, all schools have sufficient clean water available (15L/person/day). Most (76.9%) schools have a distance between the clean water source and the septic tank of more than 10m, and from the physical quality of the water in most schools (69.2%) has met the physical quality of the water (colourless, odorless and tasteless water). Based on the research results, it was also found that the bathroom water connection channel goes directly to the ground gutter without cement. Pathogenic bacteria from bathroom waste can be absorbed into the soil and pollute water sources. This condition can cause diseases such as diarrhea. From the data, it is known that diarrhea cases are still quite high in Jambi City (15). Physically, the water also smells slightly of iron, which often occurs in groundwater in suburban and even central areas of Jambi City, due to soil conditions that contain iron.

The results of the study on latrine facilities show that most of them meet the requirements with a total score of 123 (86%) because the location of the latrine is separated from classrooms, school health unit rooms, teachers' rooms, libraries, guidance and counseling rooms so as to prevent evaporation of odors from the toilet into the room. The toilets were clean and odorless, there were no puddles of water on the floor, and cleaning and disinfecting equipment was found in the toilets. There is also a ventilation hole that is directly connected to the outside air so that the air in the toilet can be exchanged with clean air. There is a sign of toilet separation either in the form of writing or picture signs and no urinal was found in the toilet. With an average number of students >100 people per school conducting teaching and learning activities, the number of 4 toilets is insufficient for the sanitation needs of all students and teachers, where 1 toilet / urinal should be used by 40 students and 1 wc is used by 25 students. There were also no slogans to keep the toilets clean and no soap available for hand washing (2).

Transmission of disease through unclean hands can occur. The results of the study are in line with research conducted by Aulia in 2020 on the study of sanitation facilities in private elementary schools in Pahandut Village, Palangka Raya City, Central Kalimantan, which showed that it was found that the condition of toilet sanitation facilities or latrines at Nurul Ihsan Islamic Elementary School and 1 Kristen had elementary school latrine conditions that were in accordance with the standards of the Minister of Health of the Republic of Indonesia 1429/MENKES/SK/XII/2006 on Guidelines for the Implementation of School Environmental Health. However, the condition of the latrines at Christian Primary School 1 does not have a separation between the students' latrines and the girls' latrines (16).

The second component of CHSM is Learning and Teaching Formal and informal curricula, resources and related activities: 1) Knowledge, understanding and skills for students to improve their health and wellbeing and enhance their learning outcomes, and 2) Professional development opportunities for staff in relation to health and wellbeing (17). In this study, the second component studied was health promotion activities in schools related to environmental health, clean and healthy living behavior, and the availability of health promotion media. Health counseling is one way to increase community knowledge. Good knowledge can help people to behave healthily in overcoming their health problems and can contribute their energy and abilities for the benefit of their families and communities (18). Healthy behavior aims to avoid and break the chain of disease transmission. Healthy behaviors can arise due to health counseling through several media such as lectures, video media, singing, using pictures.

Based on the results of the study in Table 1, it is known that most schools still do not teach students the importance of defecating in toilets (92.3%), the importance of nutritious food (69.2%), and the importance of drinking water that is free from germs (69.2%). However, all schools have implemented the habit of disposing of garbage in the bins provided by the school (100%).

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It is known that more than half of public elementary schools in Jambi City, namely 7 schools (53.8%) are appropriate in teaching and learning related to healthy schools (CHSM), as many as 6 schools are not appropriate or have not implemented learning about healthy schools. Providing knowledge and forming awareness about clean and healthy living behavior is considered very effective when done to students since elementary school. It is hoped that when they are outside the school environment, they will be able to apply clean and healthy living as in their school. Understanding the importance of greening, utilizing sanitation facilities appropriately and managing waste are integral in efforts to improve clean and healthy living behavior. As the smallest component in society, changes that occur in the family will have an influence on the community. School environmental management can be done through increasing students' knowledge and skills in managing water, waste, energy and the yard around the school.

Public Elementary Schools in Jambi City, in realizing a healthy environment is a systematic school commitment that develops programs to internalize environmental values into all school activities. The physical appearance of the school is ecologically arranged so that it becomes a learning vehicle for all school members to be wise and behave environmentally friendly. Providing knowledge and forming awareness about clean and healthy living behavior is considered very effective when done to students since elementary school. A conducive school environment is needed to create a quality learning process.

Clean and Healthy Living Behavior in the school environment has eight indicators, namely washing hands using running water and using soap, consuming healthy snacks in the school canteen, using clean and healthy toilet facilities, exercising regularly, eradicating mosquito larvae at school, not smoking in the school environment, measuring body weight and height, and disposing of garbage in the place provided (19).

The results showed that all public primary schools in the study sample already had written school rules/policies related to the implementation of health protocols in schools. A rule/policy is a rule that is organized, with the aim that everyone who implements this rule does so in accordance with the rules that have been made. The application and implementation of school rules, helps students to be trained and accustomed to living regularly, responsibly and maturely (20). With the existence of school regulations on health protocols, the school community has guidance in carrying out the expected behavior and the consequences if the behavior is not carried out.

Based on the results of the study, it is known that most public primary schools in Jambi City (92.3%) have rules related to sanitation management in schools, most schools (84.6%) have sanctions if rules related to sanitation management are violated by students or teachers, most schools (69.2%) school sanitation activities are listed in the school revenue and expenditure budget plan / school work and budget plan, and most schools (92.3%) have a cleaning schedule or picket for students to clean the classroom every day. The role of the principal is based on the understanding that the success of the school is the success of the principal. Therefore, principals need to have the required competencies in order to realize the vision and mission of their school (21). A number of experts agree that principals must be able to carry out their work as *educators*, managers, *administrators* and *supervisors*, abbreviated as EMAS. The future perspective suggests that principals must also be able to act as figures and mediators for the development of society and the environment. Such principals will be able to push the vision and mission into action in realizing sanitation facilities in schools (22–24).

Based on the results of in-depth interviews that have been conducted to 13 school principals, the results show that as a principal in a school, it has a very important role and has the responsibility of managing schools from academic and non-academic matters, especially in providing maintenance on school sanitation facilities. Sanitation management involves all school members, and related parties, such as committee administrators, parents of students, and other interested parties (25). Good sanitation

management improves the school community's ability to utilize a clean, healthy and beautiful school environment.

CONCLUSION

The results of the study from 3 CHSM assessment criteria, it is known that the physical environment criteria (clean water facilities meet the requirements (69.2%), latrine facilities on average meet the requirements (69.2%), most of the primary schools waste water disposal facilities do not meet the requirements (76.1%), and most of the waste disposal facilities meet the requirements (92.3%)), teaching and learning criteria more than half of primary schools (53.8%) are appropriate and implement teaching and learning about healthy schools, sanitation and clean and healthy living behavior in schools, school policy criteria are known that most schools already have and implement policies on healthy schools. The principal in a school has a very important role and responsibility in managing the school in terms of academic and non-academic matters, especially in providing maintenance on school sanitation facilities. Sanitation management involves all school members and related parties, such as committee members, parents of students, and other interested parties. Good sanitation management improves the school community's ability to utilize a clean, healthy and beautiful school environment.

AUTHOR CONTRIBUTIONS

This study has some processes, with each role ranging from conception and design of the work of study, finding the appropriate questionnaire, and conducting validity and reliability tests for the questionnaire to data collection, data analysis, and interpretation, drafting of the article, critical revision, and final approval of the version to be published. we, as a team, collaborated on each part of the process. the major research leader is the corresponding author who conducted this study from its start and ended by publishing this research article. fajrina hidayati: conceptualization, conducted therapy, analyzed data by software, writing; adila solida: data collected, handled permitted letter legal research; evy wisuda riani: data collected; andree aulia rahmat: permitted letter legal research, wrote the manuscript and submittion manuscript.

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