

ACCESS TO HOUSEHOLD SANITATION DURING THE COVID-19 PANDEMIC: A QUALITATIVE STUDY IN DENSE SETTLEMENT AREA OF PALEMBANG

Dahlia Margareth, Yustini Ardillah*, Indah Purnama Sari, Anggun Budiastuti
Faculty of Public Health, Universitas Sriwijaya, Jl. Palembang-Prabumulih KM 32 Ogan Ilir, 30662,
Indonesia

ABSTRACT

During the COVID-19 pandemic, access to sanitation is an important part of preventing COVID-19. Poor sanitation in the household has the potential to cause the spread of disease at the household level. Densely populated settlements are areas with the highest COVID-19 prevalence. The purpose of this research was to describe access to sanitation in households in densely populated residential areas. This study was Qualitative with descriptive design. Information was collected through in-depth interviews with informants and observations of sanitation facilities at the household level. People in densely populated settlements have access to clean water that meets the requirements of clean water for use in their daily life, however, the community had not fully provided hand washing facilities that meet standards, such as not equipped with soap and not having posters of information on how to wash hands. proper hand washing. Provision of temporary waste disposal facilities in community homes hds not met existing standards, such as not made of strong materials, easy to rust, not easy to clean and many are not equipped with covers. Some people did not carry out processing and sorting of waste before finally throwing it into the trash. In addition, the implementation of disinfection was no longer routinely carried out. People can not afford to buy disinfectant. Access to sanitation in densely populated settlements had not been maximally fulfilled, it is necessary to improve the quality of sanitation facilities at the household level

Keywords: COVID-19, household, sanitation

ABSTRAK

Pada masa pandemi COVID-19 ini, akses sanitasi menjadi bagian yang penting dalam pencegahan COVID-19. Sanitasi yang buruk dirumah tangga berpotensi menyebabkan penyebaran penyakit di level rumah tangga. Pemukiman yang padat penduduk merupakan daerah dengan prevalensi Covid-19 tertinggi. Tujuan penelitian ini adalah untuk menggambarkan akses sanitasi di rumah tangga di daerah pemukiman padat penduduk. Metode penelitian ini adalah Kualitatif dengan desain deskriptif. Informasi dikumpulkan melalui wawancara mendalam kepada Informan dan observasi fasilitas sanitasi di level rumah tangga. Hasil studi menunjukkan Masyarakat di pemukiman padat penduduk telah mempunyai akses air bersih yang memenuhi persyaratan air bersih untuk digunakan dalam kehidupan sehari-hari akan tetapi, masyarakat belum sepenuhnya menyediakan fasilitas cuci tangan yang memenuhi standar, seperti tidak dilengkapi dengan sabun serta tidak mempunyai poster informasi tentang cara mencuci tangan yang baik dan benar. Penyediaan sarana tempat pembuangan sampah sementara pada rumah masyarakat belum memenuhi standar yang ada, seperti tidak terbuat dari bahan yang kuat, mudah berkarat, tidak mudah dibersihkan serta banyak yang tidak dilengkapi dengan penutup. Sebagian masyarakat tidak melakukan pengolahan dan pemilahan sampah sebelum akhirnya dibuang ke tempat sampah. Selain itu, pelaksanaan disinfeksi tidak lagi rutin dilakukan. Hal ini disebabkan oleh masyarakat yang tidak mampu membeli disinfektan. Akses sanitasi di pemukiman padat penduduk belum maksimal terpenuhi, perlu peningkatan kualitas fasilitas sanitasi di level rumah tangga.

Kata Kunci : COVID-19, sanitasi, rumah tangga

Correspondence Address: Yustini Ardillah, Faculty of Public Health, Universitas Sriwijaya, Jl. Palembang-Prabumulih KM 32 Ogan Ilir, 30662, Indonesia, E-mail: yustini_ardillah@fkm.unsri.ac.id

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Introduction

Sanitation is an essential part of the environment, and poor sanitation will be a risk factor for the transmission of infectious diseases. Environmental sanitation needs attention, especially in clean water supply, availability of latrines, wastewater treatment, waste disposal, and soil pollution.¹ The COVID-19 pandemic has not been over yet. Vaccination is not enough to prevent the spread of this virus. Vaccinations have been carried out but people must keep a distance, wear masks, and maintain personal hygiene. Several studies explain that water hygiene and sanitation play a role in handling COVID-19.²

A study was conducted in slum areas of Bangladesh discusses the challenges of preventing the spread of COVID-19. The first COVID-19 case identified in the country occurred on March 8, 2020. Around 37% of households live in slums, which are about 26-50 square feet per house and are densely populated. Due to the dense population, people can not maintain physical distance properly. Only about 28% of residents have handwashing facilities equipped with soap and water. Moreover, they do not have adequate knowledge about personal hygiene.³

The COVID-19 problem remains a problem in Palembang City. According to data from the Palembang City Health Service for confirmed COVID-19 cases and Ilir Barat 1 District, Ilir Barat 1 occupies the highest position of COVID-19 cases with the number of confirmed cases as many as 174 cases as of February 1 in 2019. Data from Ilir Barat District 1 in Figures 2019 shows that Lorok Pakjo Village has the highest number of slum locations and dense population, as many as 7 locations with 252 house buildings and 325 families with poor sanitation quality.⁴

Sanitation access consisting of clean water supply, personal hygiene, household waste management, washing hands facilities is basic need in household to prevent communicable disease especially COVID-19. Slum area which has a dense population and poor sanitation had higher risk factors of COVID-19 transmission.⁵ Therefore, access of sanitation should be ensured to be able cover the needs in this pandemic era.

The clean water supply and environment and good sanitation are also critical so that humans can maintain health from extraordinary events (outbreak) of infectious diseases, such as the current COVID-19. In addition, the importance of implementing excellent and routine WASH and waste management practices, both at the household, community, market, school, and health facilities levels. So that these things will prevent the transmission of the COVID-19 virus from one individual to another,⁶ the purpose of this study is to describe access to sanitation in dense settlement areas in Palembang.

Method

This research was located in Lorok Pakjo Urban Village, one of the urban villages with the highest population density and is categorized as a slum area in Palembang City. The informants in this study consisted of 5 heads of the Neighborhood Association and five community members as key informants and one sanitarian officer as a regular informant who was in Lorok Pakjo Village, Ilir Barat 1 District, both of whom were directly involved in the implementation of environmental sanitation and authorized in implementation of the fulfillment of environmental sanitation facilities and infrastructure in household communities in Lorok Pakjo Urban Village, Ilir Barat District.

This research was descriptive research with a qualitative approach. Data obtained directly from data sources when researching the object of research and given to research data collectors is called primary data. In addition, data was also obtained or collected by researchers from existing sources, and researchers are second-hand. In this study, the data collection process was conducted by direct observation of sanitation facilities and in-depth interviews with informants whom the researcher had determined.

This study explored sanitation access in slum area consisting of clean water access, handwashing facilities, waste water disposal and disinfection program. All of subject was measured through indepth interview with informants. They were head of slum area neighborhood, representative of slum area community. We also interviewed responsible sanitarian in slum area. Observation was conducted to measured the quality of water, waste water disposal, handwashing facilities and disinfection program.

Data and information from observations, recordings, and notes during in-depth interviews were collected then transferred into written form. Then classify the data by categorizing the data based on the same characteristics. Furthermore, presenting a summary in a matrix and analyzing data using a matrix containing summaries and data from in-depth interviews and related documents.

The validity of the data was carried out using the triangulation method, which aims to ensure the validity of the data obtained at the time of the study. The data analysis used is a table/matrix containing the summary results of in-depth interviews, questionnaires, and observations. The data obtained is then analyzed using the Content Analysis method and presented in a narrative for interpretation. The presentation of the data was done by comparing the results obtained with the theory in the literature review and the results of research with similar topics that other researchers have carried out. This study has ethical approval from public health faculty of Universitas Sriwijaya nomor: 183/UN9.FKM/TU.KKE/2021.

Result

Interviews were conducted to obtain information about access to clean water in their neighborhood. These were interview excerpts with key informants, the head of the neighborhood association (RT), and the community regarding access to clean water:

“Yes it is, We use Local Company water. It is easy” (Y)

“Yes we use local company service, we can access clean water every day, 24 hours” (ER)

“Yes it is enough, we can access clean water in morning and afternoon” (S)

“We can access 24 hours” (IN)

Based on the in-depth interview results, it was found that they already had access to Regional Drinking Water Company (PDAM) as a clean water source that was easily accessible and had sufficient quality and quantity needs. Ten others respondents explained the same statement, and eight respondents reported that clean water flows for 24 hours, while two others reported flows at a specific time only. Additionally, this study also found the increase of clean water used during the COVID-19 pandemi, which certainly affects the availability of clean water in the neighborhood. The results of interviews with key informants reported:

“We used much more than before, it is around a half of that” (IR).

“Yes it, we can see from our monthly water fee, it was significantly increased” (EN).

“It was as usual, it was normal.” (K).

We could conclude that four respondents reported increasing use of clean water during pandemic while six others explained regular use as before pandemic; however, all respondents did not undergo a shortage of water supply due to the increasing demand for clean water. Respondents' opinions about clean water during the Covid-19 pandemic were also asked. There was an excerpt of the report:

“According to me, water is very important for our body therefore dirty water will affect to our health” (IN).

“Yes because it one of step to prevent Covid-19, washing hands and keep the cleanness” (MM).

As reported on the excerpt of the respondent explanation above, a supply and access of clean water play an important role in preventing the transmission of COVID-19. Furthermore, household observation of clean water was also conducted in this study, as presented in the table. One below:

Table 1. Clean Water Facilities in Lorok Pakjo

Variable	RT 1	RT 2	RT 3	RT 4	RT 5	RT 6	RT 7	RT 8	RT 9	RT 10
Source of clean water from wells/springs/PDAM	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓
	No									
Distance of clean water source with septic tank ±10 meters	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓
	No									
Clean, and not accident-prone	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓
	No									
No taste	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓
	No									
No Colour	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓
	No									

As presented in the table. 1, the physical condition of water supplied from PDAM/Plumbing was odorless, tasteless, and colorless. Therefore, people in slum area of lorok pakjo had standard clean water. Moreover, the community had understood the critical role of clean water, especially during this COVID-19 pandemic.

Handwashing facilities are essential for preventing disease transmission, including COVID-19 infection (9). Therefore, an interview and household observation assessment were also conducted to analyze the availability of hand wash facility including hand sanitizer used by the community in Lorok Pakjo Urban Village.

“Hmm.. we have both, hand-sanitizer and soap for washing hands” (IR).

“No, we don't have. We just have tap and we collect the water in the container” (ER)

Nine out of ten respondents stated that they had provided hand washing facilities and hand sanitizers. Moreover, they also did hand washing before entering their house after going out of their house, as stated in quote below:

“ After arriving home, we directly wash hands and we also wash hand in our. Since the virus asked us to maintain the cleanliness.” (EA)

“Yes we, wash our hands, because we are afraid of the virus” (SE).

The information on the frequency of handwashing among respondents was also obtained. Seven respondents informed unknown frequency, one respondent reported three times a day, one reported three to four times a day, and another reported ten times a day.

“I don't know exactly, when we go and back, we wash our hands.” (Y).

“we wash hands three or four times” (EA).

“Every time we go out, we wash our hands” (K).

All the ten respondents knew and applied how to do handwashing properly. Moreover, two out of ten respondents added one handwashing facility in their house during the Covid-19 pandemic.

“Hmm, , inconsistent, for sure washing hands, only if it is according to the recommendations from the public health center staff sometimes it is not too routine. Yes, by rubbing the entire palm of the hand. The palms of the hands as well as the outside and the whole between the fingers with running water” (SE).

“Only a few children were informed but still careless, and did not apply. Basically, you can wash it regularly, but keep on washing it even if you don't do it, it's okay, it's not complete, right, but wash it. Yes, the water is turned on by the faucet, the faucet doesn't pour heavily, at least the speed must be half, right, not too much.” (ER).

“There is no addition for hand washing, and the water flows 24 hours” (Y).

“Yes there is, almost every citizen provides it” (MM).

Table 2. Handwash Facilities in Lorok Pakjo

Variable	RT 1	RT 2	RT 3	RT 4	RT 5	RT 6	RT 7	RT 8	RT 9	RT 10
Hand washing area available	Yes		✓	✓	✓		✓	✓		
	No	✓				✓			✓	✓
Equipped with soap	Yes		✓	✓			✓	✓		
	No	✓			✓	✓			✓	✓
There is a hand dryer.	Yes									
	No	✓	✓	✓	✓	✓	✓	✓	✓	✓
Post information about education on how to wash hands with soap properly	Yes		✓							
	No	✓		✓	✓	✓	✓	✓	✓	✓
Hand sanitizer is available in places far from handwashing facilities with soap.	Yes									
	No	✓	✓	✓	✓	✓	✓	✓	✓	✓

As described in table 2, five respondents in different area had handwashing facilities, four had handwashing facilities equipped with soap, and one respondent posted information about washing hands with soap properly. No respondent had handwashing facilities equipped with hand dryers and hand sanitizers. Based on interviews and household observation, we could conclude that there were still people in Lorok Pakjo Urban Village who did not have handwashing facilities at home per the standard handwashing facilities. However, the public had understood how crucial proper handwashing practice is, especially during this COVID-19 pandemic.

Interview and observation of garbage disposal facilities were also assessed in this study. Respondent reported no additional garbage disposal sites from before-during the pandemic.

“Nothing, the big one which is put over there” (EA).

“Nothing” (SE).

Some respondents did not do waste processing and did not sort waste by type before finally being disposed of in a temporary waste disposal site.

“Nothing...” (Y).

“Yes, if we do it routinely, we have to clean... twice a day” (K).

“Selective? For example, if it's plastic, let's go directly” (IN).

“Hmm, there are some, some are for the compost plant, some are thrown away” (S)

Some respondents understood how to process and sort waste correctly and adequately but did not do or apply it in their daily lives.

“The process is that used vegetable waste is thrown in places, this is the vegetable part, this is the paper part. So, it's fat, it's fat to get rid of it. It can fit the pile of vegetables, right?” (ER).

“Yes, waste should be separated, which one can be recycled and which one cannot. For recyclable waste, in our kelurahan there is already a waste bank for further processing, while waste that cannot be recycled should be disposed of in a temporary waste disposal site.” (MM).

Key informants, head of neighborhood association (RT), were asked about any warning for people who do waste processing in the wrong way. Four out of five heads of RTs give warnings to people who treat waste in the wrong way, such as by burning.

“Yes, that's what we suggested, right? collected, put in a plastic bag, dumped on river like that” (IR).

“Yes, no, that's for hmm, or has it been burned, at least for plant fertilizer, hmmm, compost” (S).

An interview was conducted to assess the efforts made by the head of the RT and the community to reduce the waste generated every day. Three respondents did not reduce the waste produced every day, and seven other respondents reported reducing waste in different ways.

“Nothing..” (SE).

“Yo, if you reduce it, minimize it when you shop, you can use old plastic. When shopping, I only ask for one plastic bag or can only use paper and I also sometimes bring my own shopping bag...” (ER).

Table 3 showed the information on garbage disposal materials. Based on observation, all respondents did not have a waste disposal container with water-resistant material. Seven respondents had garbage disposal made of non-rust materials. In addition, five respondents had garbage disposal containers made of solid and easy-to-clean materials. Seven respondents had trash cans made of lightweight materials, and only one respondent had a trash can equipped with a cover.

Table 3. Garbage Disposal Materials Facilities in Lorok Pakjo

Variable	RT 1	RT 2	RT 3	RT 4	RT 5	RT 6	RT 7	RT 8	RT 9	RT 10
Water-resistant material	Yes									
	No	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-rust materials	Yes	✓	✓	✓			✓	✓	✓	✓
	No				✓	✓				✓
Solid materials	Yes	✓	✓	✓			✓	✓		
	No				✓	✓			✓	✓
Easy-to-clean materials	Yes	✓	✓	✓			✓	✓		
	No				✓	✓			✓	✓
Lightweight materials	Yes	✓	✓	✓			✓	✓	✓	✓
	No				✓	✓				✓
Equipped with a cover	Yes	✓								
	No		✓	✓	✓	✓	✓	✓	✓	✓

As a summary of garbage disposal, there was no Additional waste disposal site during the Covid-19 pandemic in the Lorok Pakjo Urban Village. All respondents who lived in Lorok Pakjo Urban Village had garbage disposal sites at home, but many of its garbage disposals did not meet the requirements for proper trash bins. In addition, they had understood about the processing and sorting of waste, but they did not apply it routinely.

Another approach to prevent disease transmission is maintaining personal hygiene and environmental sanitation by using antiseptics and disinfectants (10). Based on interviews reported, routine disinfection was only carried out at the beginning of the Covid-19 pandemic, while currently, people are no longer doing it routinely.

“After the pandemic, yes. That's what I did myself, Ms. If it's rare now, yesterday it was routine” (SE).

“No. Sometimes that's our request, if it's really in our area, if only there was a keno, right, that's new.” (IR).

The head of the sanitarian of Lorok Pakjo Community Health Center reported that the Sanitarian Team had implemented disinfection in the community neighborhood in Lorok Pakjo Urban Village. They even taught the community how to make the disinfectant itself.

“We apply also to disinfectant. Yes, we are also the disinfectant, hmmm.. we will teach the public how to make the disinfectant. Because if they want to buy it may be difficult. So we, hmmm.. there we have a practice on how to make the disinfectant” (SA).

However, the implementation of disinfection was no longer routinely carried out because of the unavailability of adequate facilities and budget prepared for the implementation of disinfection in the RT neighborhood. Moreover, the awareness of the community of the importance of disinfection during the COVID-19 pandemic was still low.

“Because there are no facilities, such as a disinfectant, right?” (MM).

“Yes, because I did it myself, so it's 4 times a month. Yes, what do we want to do if we want to ask for donations from residents, it is impossible, he also has a difficult life. Yes, we ourselves, if it's been 4 months 5 months, it's tiring...” (SE).

“No problem by maybe we are also ordinary people's minds. We feel like we're not moving around like that, right? Here, too, people are here and here, not outsiders come here. So we're not too like this (EN).

Furthermore, respondents knew the importance of disinfection to prevent the transmission of COVID-19.

“For Covid, it's important. We don't know who the virus came from, we must maintain cleanliness, to prevent transmission of the virus” (ER).

“Yes very important, very important. Because just like washing your hands earlier, it's a preventive process. Because our place is also not closed, many people enter from outsiders who come. We don't know if they carry the virus or not” (MM).

Discussion

Water is one of the basic human needs. The supply of clean water, sanitation, and personal hygiene are critical to protecting human health during an outbreak of infectious diseases, including the Covid-19 outbreak⁷. Many people's behavior changed during the COVID-19 pandemic, increasing household consumption of clean water.^{8, 9} Based on the research results conducted on the Lorok Pakjo Urban Village community, the community already had access to clean water sourced from PDAM / Plumbing before and during the pandemic. The clean water flowed for 24 hours, and in some houses, it flowed at certain hours.

4 out of 10 respondents in this study reported increasing use of clean water, which indicated a change in people's behaviour to the cleaner lifestyle. Some people experience increasing water use by 50%, 75%, and others. One of the respondents said that this happened because, since the

pandemic, family members were washing their hands and bathing more often. The head of RT 19 also revealed that residents who visit his homes, even for an administrative-related issue, must still carry out health protocols, one of which is washing their hands.

Apart from that, some respondents reported that they did not undergo increasing use of clean water during the COVID-19 pandemic. However, the four informants did not have a shortage of water supply because the water flowed for 24 hours at home, and if at any time the water did not flow, the Urban village officer usually notifies several days in advance that the water would not flow, so that they had sufficient water supply for their daily needs.

Humans cannot survive without water because it is necessary to use it for drinking, bathing, washing, and toileting.^{6, 10} Based on observations made in 10 Lorok Pakjo Urban Village households, the clean water had met the physical quality standards: colorless, odourless, and tasteless. Similar findings were in line with this study's results, stating that clean water is odourless, tasteless, and colourless.^{2, 8, 11, 12}

Handwashing facility is the vital tool expected to increase public awareness about the importance of maintaining personal hygiene to prevent the spread of COVID-19.^{11, 13} The study results showed that nine out of ten respondents had a handwashing facility and hand sanitizer in their house, which was expected to minimize the transmission of COVID-19. Hands are a part of the body that is easily contaminated with dirt and germs, where when we hold an object or shake hands, the germs are attached to the skin of the hands.^{14, 15} All respondents in this study had to wash their hands before entering the house after going out of their house. A total of 7 informants often wash their hands with an unknown frequency, and the other 3 to 4 times a day, and even ten times a day. A person can be infected with the COVID-19 virus if droplets stick to other surfaces. A person can also become infected with the object or surface. Therefore, washing hands regularly with soap and clean running water is essential.^{16, 17}

Based on interviews, two respondents added handwash facilities during the pandemic. A Similar study found that adding handwash facilities equipped with soap in strategic locations made people easier to practice handwashing with soap. There were respondents in Lorok Pakjo Urban Village who did not have handwash facilities at home per the standard handwash facility used daily. However, the community had understood how important the proper handwash with soap regularly, especially during this COVID-19 pandemic. The community also knew and applied correct hand washing methods, which was in line with research that found that correct behavior can be grown without inhibiting factors, such as the availability of clean water facilities and training to adjust knowledge and good attitudes.^{18, 19}

Garbage is a waste material resulting from human and animal activities that are no longer used.^{20, 21} Safe handling and waste disposal treatment are essential elements of effective emergency response in preventing the transmission of the COVID-19 virus. Study results found no additional

trash boxes during the COVID-19 pandemic in the household neighborhood in Lorok Pakjo Urban Village. In addition, many people did not process and sort their waste according to its type before it was finally disposed of in a temporary waste disposal site. Law no. 18 of 2008 concerning Waste Management stated that we must manage household waste and similar and reduce and handle waste in an environmentally friendly manner.

In addition, the four Heads of community neighborhood rebuked the community for processing waste in the wrong way, for example, burning it. Another head of the Neighborhood Association did not reprimand the community because he used to treat waste by burning it, which would leave air pollution as the impact of waste processing. The community can reduce this concern by raising public awareness of the importance of disposing in its proper place and sorting it before disposing it in a temporary dump.²²

Three respondents reported not reducing the waste generated every day, and seven other respondents did the waste reduction in different ways, such as using plastic bags when shopping. The community could minimize waste by reducing the amount and volume at the source. Therefore, reducing the quantity/volume of waste and processing waste is critical in tackling problems caused by waste, especially in big cities.¹²

In addition, all respondents did not have a waste disposal container with water-resistant material. Seven respondents had garbage disposal made of non-rust materials. In addition, five respondents had garbage disposal containers made of solid and easy-to-clean materials. Seven respondents had trash cans made of lightweight materials, and only one respondent had a trash can equipped with a cover. The study finding was not in line with previous research,⁷ where the community should dispose of waste in a close trash can to avoid insects as an intermediary (vector) for disease occurrence.

Disinfection is one of the prevention efforts in suppressing the transmission of the COVID-19 virus⁶. The implementation of disinfection in the household neighborhood in Lorok Pakjo Urban Village was not optimal. The study reported that some neighborhoods had not been routinely disinfected. one respondent revealed that routine disinfection was carried out only at the pandemic's beginning. Therefore, The community must be diligent in regularly disinfecting their house, especially on frequently touched items (such as light switches, doorknobs, etc.) and items that come from outside the house.^{2, 23} The Lorok Pakjo Community Health Center head revealed that the Sanitarian team had disinfection, both inside and outside the house.

Moreover, the sanitarian team went directly to the household neighborhood to teach the community how to make disinfectants. The disinfection was not routinely carried out for several reasons, including the unavailability of adequate equipment and budgeting. Moreover, the implementation of disinfection in the household neighborhood was low due to the lack of awareness of some people about the importance of disinfection. In addition, it is also crucial for

the community to know that the use of this disinfectant is effective if the selection is proper and used according to its designation. So it is necessary to directly educate the public by health workers to prevent the further spread of the COVID-19 virus.³

Conclusion

The supply of clean water in slum area of Lorok Pakjo had met the standard of clean water. The water sourced from Local Water Company flowed on average 24 hours/day. In addition, some communities experienced an increasing use of clean water during the pandemic but did not experience a reduction of clean water supply. Handwashing facilities in Lorok Pakjo Urban Village were available, but there were no additional handwash facilities during the pandemic and had not met the standard of proper handwash facilities. There were no additional garbage disposal facilities in Lorok Pakjo Urban Village during the pandemic, but the current waste disposal was sufficient to meet the standards of proper waste disposal sites. Disinfection carried out by households in Lorok Pakjo Urban Village had not been maximally carried out due to several things like the difficulty of buying the disinfectant. Therefore, through the Public Health Center, the government had carried out disinfection in residential areas and taught the community how to make disinfectants.

Suggestions for the community are to add handwashing facilities both in the household neighbourhood and in their respective homes and equip them with soap and educational posters on how to wash hands properly and correctly—in addition, repairing waste disposal facilities that are not per existing standards, carrying out disinfection and applying the method of making disinfectants independently. Suggestions for the related health centers to carry out Environmental Health Monitoring / Inspection regularly, especially on community settlements in Lorok Pakjo Urban Village, to see and assess the state of environmental sanitation and provide suggestions for improvement of sanitation facilities to the local neighbourhood. and also, may Continue to carry out routine disinfection and teach how to make disinfectants to the community in Lorok Pakjo Urban Village.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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