Penyebab Buang Air Besar Sembarangan (BABS) di Provinsi Jawa Timur Tahun 2018

Causes of Open Defecation in East Java Province in 2018

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ABSTRACT

***Background**: Open defecation (OD) is a sanitation problem that can have a negative impact on health. Open defecation can have a bad impact on sanitation this poor sanitation can then trigger various diseases. **Objective**: This study aims to find out the factors related to the behavior of open defecation (OD) in Regency/City communities of East Java Province in 2018. **Methods**: Ecological approach based on secondary data published by the Ministry of Health of the Republic of Indonesia, East Java Provincial Health Office, and the Central Statistics Agency of East Java Province of 38 districts/cities in East Java Province were included in this study. This study examined the percentage of healthy latrine users with 4 other independent variables, namely the percentage of facilities that met the available requirements, the percentage of villages that applied Community Led Total Sanitation (CLTS), the prevalence of diarrhea cases, and the percentage of illiteracy rates. Data were analyzed using cross tabulation with SPSS. **Results**: There were still several districts/cities in East Java Province that had not used latrines when defecating, most of them were in districts/cities with inadequate facilities, low percentage of villages willing to implement CLTS, low percentage of illiteracy, and moderate diarrhea prevalence. **Conclusion**: Based on these results, it can be concluded that the factors of the availability of facilities, education, compliance with CLTS implementation, and the prevalence of diarrhea have a relationship with the percentage of latrine users in districts/cities in East Java Province. The results of this study can be used by local stakeholders to make health-based policies as an effort to reduce open defecation.*

***Keyword**: latrines; open defecation; secondary data; ecologycal analysis*

INTRODUCTION

Open defecation (OD) is an act of disposing of feces in fields, forests, bushes, rivers, beaches, or other open areas and allowing them to spread to contaminate the environment, soil, air, and water (Fitrianingsih & Wahyuningsih, 2020). Open defecation is an unhealthy behavior that is still often seen everywhere (Paladiang et al., 2020). World Health Organization (WHO) and United Nation International Children's Emergency Fund (UNICEF) explais that open defecation is always practiced, with a quarter of cases not having specific policies and plans. Most countries already have data on open defecation and access to basic sanitation services. From this data, it is estimated that as many as 673 million people still do not have latrines and practice open defecation (WHO/UNICEF, 2020).

The minimal percentage of use of healthy latrine facilities in districts/cities of East Java can be one of the benchmarks in the open defecation assessment. Based on data in Dinas Kesehatan Jawa Timur (2019), it shows that there were only 9 out of 38 regencies/cities in East Java Province that had reached 100% use of healthy latrines, the other 29 regencies/cities were still in percentage numbers between 74.91% to 99.83 %.

There are many factors and strategies that can be done to overcome the problem of open defecation, one of data, source doesn't need to be written. Number of tables and figures allowed is as which is through Community Led Total Sanitation (CLTS). In Indonesia, the percentage of villages implementing CLTS

Received: 30-09-2021, Accepted: 07-12-2021, Published Online: 23-03-2021

in 2018 has exceeded the target. Based on Kementrian Kesehatan Republik Indonesia (2019), the target of villages that should implement CLTS was 40,000 villages, while the realization was that 49,283 villages implemented CLTS. However, the percentage of latrine use in Indonesia, especially in East Java, is still not maximized, this indicates that it is not only the percentage of villages that apply CLTS that affects the low percentage of latrine users in East Java. There are other factors such as level of education, knowledge, and availability of facilities (Murhan & Aprina, 2020).

Open defecation can have a bad impact on sanitation, this poor sanitation can then trigger various diseases. Various diseases resulted from poor sanitation in Indonesia due to open defecation according to Hadiati Sukma, Mursid & Nurjazuli (2018) were 72% cases of diarrhea, 0.85% cases of intestinal worms, 0.57% of hepatitis, 23% of scabies, 0.14% of trachoma, 0.02% of hepatitis E and 2.5% of cases of malnutrition. In addition to the health impact, the presence of open defecation behavior in the community can also cause social disturbances such as discomfort due to the smell of human feces, decreased water quality (for open defecation in rivers or lakes, and so on). Based on the description of the background above, this study is intended to determine the relationship between several factors on open defecation behavior, especially in East Java in 2018.

METHOD

This research was conducted using an ecological analysis approach or an ecological approach. The data analyzed were aggregated data in certain groups or levels, the level used in this study was the regency/city level. Variables in ecological analysis can be aggregate measurements, environmental measurements, or global measurements (Laksono & Sandra, 2020).

This study was conducted by utilizing secondary data from Health Profile of East Java Province in 2018 (Dinas Kesehatan Jawa Timur, 2019), the results of the 2018 basic health research data (Badan Penelitian dan Pengembangan Kesehatan, 2018), and Education Statistics data for East Java Province in 2018 (Badan Pusat Statistik Provinsi Jawa Timur, 2019). The unit of analysis in this study was the districts/cities in East Java with a total of 38 districts/cities.

Table 1. Sources of Ecological Study Data from the Percentage of Healthy Latrine Users in East Java in 2018

Source	Variable
Health profile of East Java Province in 2018	percentage of healthy latrine users
	percentage of facilities that met the available requirements
	percentage of villages that implemented CLTS
Basic health research data in 2018	prevalence of diarrhea cases
Education Statistics of East Java Province in 2018	percentage of illiteracy rate

The dependent variable in this study was the percentage of healthy latrine users. In addition to the percentage of healthy latrine users as the dependent variable, there were 5 independent variables analyzed in this study, namely the percentage of facilities that met the available requirements, the percentage of villages that applied CLTS, the percentage of illiteracy rates, and the prevalence of diarrhea cases.

Data that were obtained would be analyzed in univariate and bivariate. Univariate analysis was performed using descriptive analysis on each variable and bivariate analysis was performed using cross tabulation with SPSS 21 software.

This study was conducted by utilizing secondary data from reports that were published on an official platform easily accessible by anyone, therefore ethical clearance was not required to carry out this research.

RESULTS AND DISCUSSION

Table 2 shows the results of the descriptive analysis of the variables of healthy latrine users with other related of the districts/cities in east java had been using 100% healthy latrines and most had not yet. One area that had 100% utilized latrines well was Ponorogo Regency. While the area with the lowest latrine users was Pacitan Regency with a percentage of 74.91%. Among the 38 regencies/cities in East Java Province, the lowest percentage

Received: 30-09-2021, Accepted: 07-12-2021, Published Online: 23-03-2022

of facilities that met the available requirements was 74.04% and the highest percentage was 100%. The percentage of villages that implemented CLTS was the lowest 18.00% and the highest was 100%. The lowest percentage of illiteracy rates was 1.26% and the highest was 21.88%, and the lowest prevalence of diarrhea cases was 1.04% and the highest was 11.53%.

Table 2. Descriptive Statistical Variables of Healthy Latrine Users with Related Variables

	N	Average	Min.	Max.	Middle value	Std. Deviation	Variance
Percentage of healthy latrine users	38	25.09	74.91	100.00	94.55	6.76	45.74
Percentage of facilities that met the requirements available	38	25.96	74.04	100.00	95.61	6.42	41.23
Percentage of villages that implemented CLTS	38	82.00	18.00	100.00	90.25	17.33	300.35
Illiteracy percentage	38	20.62	1.26	21.88	8.19	5.43	29.49
Prevalence of diarrhea cases	38	10.49	1.04	11.53	6.08	2.12	4.52

Source: (Badan Penelitian dan Pengembangan Kesehatan, 2018; Dinas Kesehatan Jawa Timur, 2019)

Table 3 shows the results of the cross tabulation between the percentage of facilities that met the requirements available and the percentage of healthy latrine users. Based on the Table 3, we can find that low percentage latrine users (74.91-83.27) were in inadequate to adequate facilities district/city. Moderate latrine users (83.28-91.64) were mostly (75.0%) in regency/city with adequate facilities, and high latrine users (91.65-100.00) were mostly (83.9%) in regency/city with adequate latrines. This means that the more adequate the facilities in a regency/city, the higher the number of latrine users in that regency/city.

Table 3. Cross Tabulation of the Percentage of Facilities that Met the Available Requirements with the Percentage of Healthy Latrine Users

Percentage of facilities that met the available requirements	Percentage of healthy latrine users					
	Low (74.91-83.27)		Moderate (83.28-91.64)		High (91.65-100.00)	
	n	%	n	%	n	%
Inadequate (74.04-82.69)	1	33.3	1	33.3	0	0.0
Fairly Adequate (82.70-91.35)	1	33.3	0	0.0	5	16.1
Adequate (91.36-100.00)	1	33.3	3	75.0	26	83.9
Total	3	100	4	100	31	100

Source: (Dinas Kesehatan Jawa Timur, 2019)

Table 4 shows the results of the cross tabulation of the percentage of villages that implemented CLTS with the percentage of healthy latrine users. Based on Table 4, it can be seen that the percentage of healthy latrine users was low (74.91-83.27) and moderate (83.28-91.64) in districts/cities with a high percentage of villages implementing CLTS. Meanwhile, the highest percentage of latrine users (87.1%) was in districts/cities with a high percentage of villages that implemented CLTS. This means that the higher the percentage of villages that implement CLTS, the higher the latrine users.

Received: 30-09-2021, Accepted: 07-12-2021, Published Online: 23-03-2022

Table 4. Cross Tabulation of the Percentage of Villages that Implemented CLTS with the Percentage of Healthy Latrine Users

Percentage of villages that implemented CLTS	Percentage of healthy latrine users					
	Low (74.91-83.27)		Moderate (83.28-91.64)		High (91.65-100.00)	
	n	%	n	%	n	%
Low (18.00-45.30)	0	0.0	0	0.0	2	6.5
Moderate (45.31-72.61)	0	0.0	0	0.0	2	6.5
High (72.62–100.00)	3	100	4	100	27	87.1
Total	3	100	4	100	31	100

Source: (Dinas Kesehatan Jawa Timur, 2019)

Table 5 shows the results of the cross tabulation between the percentage of illiteracy with the percentage of healthy latrine users. Based on Table 5, we have found a low percentage of latrines users (74.91-83.27) are in regency/city with moderate illiteracy, percentage of moderate latrine users (83.28-91.64) by 50% were in district/city with a low and moderate percentage of illiteracy, and the highest percentage of latrine users (61.3%) were in districts/cities with a low percentage of illiteracy. This means that the lower the illiteracy rate, the more the latrine users.

Table 5. Cross tabulation of the percentage of illiteracy with the percentage of healthy latrine users

Illiteracy percentage	Percentage of healthy latrine users					
	Low (74.91-83.27)		Moderate (83.28-91.64)		High (91.65-100.00)	
	n	%	n	%	n	%
Low (1.26-8.13)	0	0.0	2	50	19	61.3
Moderate (8.14-15.02)	3	100	2	50	8	25.8
High (15.03–21.88)	0	0.0	3	0.0	4	12.9
Total	3	100	4	100	31	100

Source: (Badan Pusat Statistik Provinsi Jawa Timur, 2019; Dinas Kesehatan Jawa Timur, 2019)

Table 6 shows the results of the cross tabulation of the prevalence of diarrhea cases with the percentage of healthy latrine users. Based on Table 6, it can be seen that the percentage of low (74.91-83.27) and high (71.0%) latrine users were mostly in districts/cities with moderate prevalence of diarrhea, moderate percentage of latrine users (83.28 -91.64) were mostly in districts/cities with a high prevalence of diarrhea. This means that the prevalence of diarrhea can increase the percentage of latrine users.

Table 6. Cross tabulation between the prevalence of diarrhea cases and the percentage of healthy latrine users

Prevalence of diarrhea cases	Percentage of healthy latrine users					
	Low (74.91-83.27)		Moderate (83.28-91.64)		High (91.65-100.00)	
	n	%	n	%	n	%
Low (1,04-4,53)	0	0.0	1	25.0	5	16.1
Moderate (4,54-8,04)	3	100	1	25.0	22	71.0
High (8,04–11,53)	0	0	2	50.0	4	12.9
Total	3	100	4	100	31	100

Source: (Badan Penelitian dan Pengembangan Kesehatan, 2018; Dinas Kesehatan Jawa Timur, 2019)

Received: 30-09-2021, Accepted: 07-12-2021, Published Online: 23-03-2022

The not yet maximum use of latrines in several districts/cities in East Java can be influenced by the availability of facilities, the percentage of villages that apply CLTS, the percentage of illiteracy, and the prevalence of diarrhea. The assumption of the influence of the availability of facilities in the use of latrines is supported by the results of previous studies which showed that one of the factors that affected open defecation free was the availability of facilities (Abubakar, 2018). The selection of this independent variable is also supported by other studies which stated that the factors that influenced open defecation behavior were the level of education and community knowledge in using latrines (Murhan & Aprina, 2020). In addition to the things above, the results of previous research conducted in Trenggalek Regency in 2018 also showed a relationship between diarrhea and cases of open defecation (Dista et al., 2018).

In 2018 the most healthy latrine users in East Java Province were in the regency/city with the percentage of adequate facilities. This means that the more adequate latrine facilities in a regency/city, the higher the percentage of healthy latrine users. This statement is in line with the results of previous studies which showed that the lower the ownership of latrines, the more people would open defecation (Dwiana, 2017). In a similar study in Pemalang Regency in 2016 also showed that open defecation behavior was influenced by knowledge, work, attitudes, availability of facilities and support from family and community leaders (Shaluhiyah et al., 2016). In addition, the results of other studies also showed that there was a significant relationship between latrine ownership and open defecation behavior (Nina, 2019). In addition to having an impact on open defecation behavior, the unavailability of latrines also affected a person's psychology (Jain et al., 2020).

The percentage of healthy latrine users were mostly in districts/cities with a high percentage of villages implementing CLTS. Community-based total sanitation is a program strategy approach to change sanitation hygiene behavior through community empowerment with the triggering method (Syarifah et al., 2020). Total sanitation is the condition of people who do not open defecation or Open Defecation Free (ODF). The principle of implementing Community-Based Total Sanitation is to eliminate subsidies for basic sanitation facilities with the aim of exploring the potential of the community in building sanitation facilities personally by developing social solidarity in the community. CLTS will encourage household responses to use household latrines (Alhassan & Anyarayor, 2018). The results of previous studies showed that CLTS was able to increase latrine coverage by 6-12% and even reach 30% (Harter, Inauen and Mosler, 2020). From this study, it can be seen that CLTS has a relationship with the use of latrines and effectively increases the percentage of latrine users, which shows that In addition, CLTS also supports the creation of a healthy society (Indriyani et al., 2016).

The inability to read or the illiteracy rate can be used as an indicator of measuring the level of education in an area. The higher the illiteracy rate in a regency/city, the lower the percentage of healthy latrine users in that regency/city. In previous studies, it has succeeded to show a significant relationship between knowledge and defecation behavior (Mailanie S, 2018). This is also supported by a research ~~by~~ conducted in Wamesa sub-district, South Manokwari district which showed that open defecation behavior was influenced by knowledge, attitudes, roles of health workers, government, cadres, and community participation (Linggar et al., 2019). Based on the results of previous research, it was shown that the education of the head of the family affected the behavior of open defecation. Education is one way for someone to get information and interpret it correctly as a cause of behavioral disease. Knowledge in the form of suggestions that invites people to think and evaluate the impact of defecating not in latrines according to health standards is an effective action (Syarifah et al., 2020).

The prevalence of diarrhea in a regency/city can increase the percentage of latrine users in that regency/city. According to a previous study conducted in 2019, the prevalence of diarrhea was slightly higher in non-ODF households than in ODF households (Megersa et al., 2019). Areas with free open defecation status had a lower prevalence of diarrhea cases compared to areas that had not achieved open defecation free status (Njuguna, 2016). The statement shows that the

Received: 30-09-2021, Accepted: 07-12-2021, Published Online: 23-03-2022

prohibition of open defecation can reduce the number of cases of diarrhea, therefore the presence of diarrhea can increase public awareness to defecate in its place. This is also supported by a similar study conducted in Jambi which showed that diarrhea was the most significant variable to create open defecation behavior in the community (Eko Mirsiyanto et al, 2020). In addition, previous research conducted by Wiwik Winarningsih, Z. Fanani, 2019 in Pasuruan, East Java also showed that the diarrhea variable had a significant direct effect on permanent healthy latrines (JSP) and open defecation (BABS).

CONCLUSION

Based on the results of the study, it can be concluded that the low number of latrine users in East Java Province in 2018 was due to the inadequacy of healthy latrine facilities, the lack of village participation in implementing CLTS, and the existence of several districts/cities with moderate illiteracy rates. Apart from these factors, the presence of diarrhea cases can actually increase the percentage of healthy latrine users. The results of this study can be used by local stakeholders to make health-based policies as an effort to reduce open defecation

ACKNOWLEDGEMENT

On this occasion it is very interesting for the East Java Provincial Health Office, the Ministry of Health of the Republic of Indonesia, and the Central Statistics Agency for providing data as material in this research.

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Received: 30-09-2021, Accepted: 07-12-2021, Published Online: 23-03-2022

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Received: 30-09-2021, Accepted: 07-12-2021, Published Online: 23-03-2022