

The Relationship Between Personal Hygiene and Incidence of Diarrhea in the Coastal Area of Kampung Bugis, Tanjungpinang City

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ABSTRACT

Diarrhea is a condition characterized by changes in the consistency of stool from softening to melting, and at least three times a day. Diarrhea is still a public health problem in developing countries such as Indonesia, because of its high morbidity and mortality. Data on diarrhea patients from the Kampung Bugis Health Center for 2017 diarrhea patients as many as 672 in 2016 amounted to 468. The purpose of this study was to identify the relationship between personal hygiene factors to the incidence of diarrhea in the coastal area of Bugis, Tanjungpinang City. The method of this study was an analytical survey with Cross-Sectional design. The location of the research is the people who live in the Coastal Areas of Bugis Village, Tanjungpinang City. A sample of 84 people (case and control), taken by consecutive sampling. Data were analyzed using the chi-square test. The results showed that there was a relationship between latrine use behavior (OR=4.667 95% CI 1.249-17.439; p=0.029); handwashing with soap (OR=4.800; 95%CI 1.251-18.421; p=0.028). Waste management (OR=4.875; 95%CI 1.274-18.649; p=0.001) with the incidence of diarrhea in the coastal area of Kampung Bugis, Tanjungpinang City. The variable most related to the incidence of diarrhea in the coastal area of Kampung Bugis in Tanjung Pinang City is a waste management facility. The prediction accuracy of the independent variable is 74%. It is recommended that the Puskesmas collaborate across sectors to improve clean behavior and be equipped with the habit of washing hands with soap.

Keywords: *diarrhea, personal hygiene, coastal*

1. INTRODUCTION

Diarrheal disease is still one of the main causes of morbidity and death. According to WHO data 2013, there are about 4 billion cases of diarrheal disease occurring every year in the world. WHO reports that the main causes of death in infants are diarrhea (post-neonatal) 14% and pneumonia (post neonatal) 14% then malaria 8%, non-communicable diseases (post-neonatal) 4% injury (post-neonatal) 3%, HIV/AIDS 2%, Measles 1%, and another 13%, and infant mortality <1 month (newborns death) 41% [1], [2].

Diarrheal disease is still a public health problem in developing countries such as Indonesia, because morbidity and mortality are still high. In 2013 there were 8 outbreaks spread across 6 provinces, 8 districts with 646 sufferers with 7 deaths (CFR 1.08%). Whereas in 2014 there were 6 outbreaks of diarrhea spread in 5 provinces, 6 districts / cities, with 2,549 patients with 29 deaths (CFR 1.14%). One of the provinces experiencing KLB is Lampung Province [3], [4].

The environment is one of the determinants of disease. Factors that directly or indirectly can be a driver of diarrhea, consisting of agents, hosts, and environmental factors. Host factors that cause increased susceptibility to diarrhea. The most dominant environmental factors are the means of providing clean water and feces disposal, these two factors will interact together with human behavior. If environmental factors are unhealthy due to contamination with diarrhea and accumulate with unhealthy behavior, the transmission of diarrhea will easily occur [5], [6].

Diarrhea is a condition characterized by changes in the consistency of stool from softening to melting, and occurs at least three times a day. Diarrheal disease is still a public health problem in developing countries like Indonesia, because of its high morbidity and mortality. Factors that can influence the occurrence are bad environmental conditions and poor health behavior and demographic conditions in the community. Data of diarrhea patients from Puskesmas Kampung Bugis the number of diarrhea sufferers in 2017 was 672 in 2016 as many as 468. The purpose of this study

was the relationship of personal hygiene and basic sanitation factors to the incidence of diarrhea in the Coastal Areas of Kampung Bugis in Tanjung Pinang City.

2. METHOD

This research method is an analytic survey with Cross-Sectional design. The research location is the people living in the Coastal Area of Bugis Village, Tanjungpinang City. A sample of 84 people, taken by consecutive sampling. The dependent variable in this study was the incidence of diarrhea, and the independent variables were personal hygiene, namely the use of latrines, clean water and handwashing and basic sanitation, namely the management of garbage, feces and household waste and the provision of clean water. Data were analyzed using the chi-square test.

3. RESULTS AND DISCUSSION

The results showed that there was a relationship between latrine use behavior (OR 4.667 95% CI 1.249-17439; p0.029); clean water usage behavior (OR 4.400; 95%CI 1.095-17,676; p=0.052); handwashing with soap (OR 4.800; 95%CI 1.251-18.421; p 0.028) waste management (OR 4.875; 95%CI 1.274-18,649; p 0.001), vector control (OR 1,986; 95%CI 0.571-6.902; p 0.354) with incidence of diarrhea in the coastal area of Kampung Bugis, Tanjungpinang City (Table 1).

Table 1. Final Models of Logistic Regression

Variable	B	p	Exp (B)
Use of healthy latrines	2.411	0.012	11.145
Waste management	2.248	0.021	9.472
Handwashing behavior with soap	1.591	0.080	4.907
Use of clean water	1.496	0.105	4.465
Constant	-3.668	0.002	0.026

Logistic regression was applied to the predicted correlation between many independent variables (X) and the single dependent variable (Z). It was also to determine the dominant factor in the incidence of diarrhea in the coastal area of Bugis, Tanjungpinang City and model was as follows. Logical Regression Equation $\ln(p / (1-p)) = -3.668 + 2,411 \text{ Use of healthy latrines} + 2,248 \text{ Waste management} + 1,591 \text{ Handwashing behavior with soap} + 1,496 \text{ Use of clean water}$.

Diarrhea is defined as the passage of three or more loose or liquid stools per day or more frequent than normal for the individual [7], [8], [9]. A variety of bacteria, viruses and parasites are the cause of diarrhea. The infection spreads through contaminated food or drinking water or from person to person as a result of poor hygiene. Diarrhea is both

preventable and treatable diseases. A fluid loss in diarrhea has fatal outcomes and it is the leading cause of malnutrition [10], [11]

The results of observations on respondents still do not have their own latrines, still using public toilets, still using latrines without septic tanks that are channeled directly into rivers, compiling latrines, and even emergency latrines by the sea, even behind the house by way of on pile with soil. Some latrines were found in a closed and unclean state. Un sanitary conditions can cause diarrhea transmission, where feces that are disposed of improperly will allow flies to infest, and flies will infiltrate family food sources, likewise fecal matter which is disposed of carelessly can pollute the population's clean water sources.

That latrine is associated with significant improvements in health even when they do not fully meet the conditions of improved latrines. The effect of latrines on health parameters by demonstrating that latrines have correlations with health benefits regardless of whether they are improved [12]. Indiscriminate stools are a risk factor for diarrhea in infants when in direct contact with hands when the child is playing ground in the yard or behind the house or indirectly through vectors such as flies that land on the stool and are transmitted through food. Lack of attention to stool management accompanied by rapid population growth will accelerate the spread of fecal-transmitted diseases such as diarrhea which is one of the environmental-based infectious diseases as risk factors for toddler's diarrhea.

Diarrhea accounts for 1.8 million deaths in children in low- and middle-income countries (LMICs). One of the identified strategies to prevent diarrhea is handwashing [11], [12]. Knowledge about personal hygiene and waterborne diseases but the practice of personal hygiene activities has to be improved, especially the practice of handwashing. It is therefore recommended to conduct further studies to assess their personal hygiene practices in detail and demonstrate the proper handwashing and hygiene practices [15], [16]

Based on observations, many people behave badly and pay less attention to using clean water to be used as drinking water. Based on physical observations still taste and color, and less attention to drinking water reservoirs. Water for personal and domestic hygiene was important in reducing the rates of ascariasis, diarrhea, schistosomiasis, and trachoma. Sanitation facilities decreased diarrhea morbidity and mortality and the severity of hookworm infection. Better water quality reduced the incidence of dracunculiasis, but its role in diarrhoeal disease control was less important than that of sanitation and hygiene [17]. Handwashing with soap is a behavior of a mother's hygiene, good personal hygiene can prevent diarrhea [18], [19]

According to the Ministry of Health, if viewed from the aspect of public health especially the pattern of spread of infectious diseases, quite a lot of diseases can be prevented through hygiene or behavior by washing hands with soap (CTPS), such as diarrhea, stomach typhus, helminthiasis, bird flu, and even swine flu which is now quite horrendous to the world. As with open defecation, hand washing, especially washing hands with soap is still an important target in health promotion, especially regarding clean and healthy living behavior. This is because the behavior is still very low, where only 12% of people wash their hands with soap after defecating, only 9% of mothers wash their hands with soap after cleaning the stools of infants and toddlers, only about 7% of people who wash their hands use soap before feeding babies, only 14% of people wash their hands with soap before eating. With proper handwashing behavior, using soap and using clean water can reduce the incidence of diarrhea. Habits associated with personal hygiene that are important in transmitting diarrheal germs are hand washing. Washing hands with soap, especially after defecating, after removing children's feces, before preparing food, before feeding the child and before eating, has an impact on the incidence of diarrhea, can reduce the incidence of diarrhea by 47% [20]

Research conducted by the Department of Engineering Action Contre Ia FAIM Fr that there are diseases that can be prevented by keeping food to be eaten, namely diarrhea, typhoid, paratyphoid, and hepatitis A. Other studies mentioned that washing all food ingredients to be cooked, washing all equipment cook with soap and clean water, and cover cooked food can prevent diarrhea [21], [22], [23]. It is necessary to increase knowledge, awareness and personal hygiene behavior related to environmental sanitation in an effort to prevent diarrheal diseases and keep themselves healthy. This effort requires individual awareness and starts from oneself, as early as possible and advises and invites families and communities to live clean and healthy

4. CONCLUSION

Puskesmas work together across sectors and communities to improve environmental health programs related to basic sanitation, which are risk factors for diarrhea. Increasing public awareness through STBM triggering programs, especially waste management (waste reduction and handling) starting from sources, defecating in healthy toilet facilities, and always accustoming handwashing behavior with soap with running water.

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