

ENVIRONMENTAL DYNAMICS WITH DIARRHEA CASE ON TODDLERS

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ABSTRACT

Diarrhea is a disease that often occurs in toddlers both in the world and in Indonesia itself, WHO noted that diarrhea cases in infants in 2013 were 1.5 billion cases with a mortality rate of around 760,000 cases. Meanwhile, according to data from UNICEF and WHO in the same year, the death rate due to diarrhea is around 2000 toddlers each year (Craswel, 2012). The highest increase in the level of public health can be realized through the creation of the people, nation and state of Indonesia which is characterized by its population living with behavior and in a healthy environment, having the ability to reach quality health services, fairly and equally. The purpose of this study was to determine the dynamics of the cause of diarrhea in toddlers. The risk dynamics that cause diarrhea are environmental health dynamics such as the availability of sewerage (SPAL), utilization of family latrines (JAGA), utilization of clean water facilities, exclusive breast milk (ASI), washing hands after defecation or before meals, and boiling drinking water, the availability of sewerage is proven to cause diarrhea in children under five. Sanitation education environment and education or health promotion for mothers of children under five need to be improved, so as to reduce the risk of diarrhea in toddlers

Keywords: Environmental Dynamics, Diarrhea in Toddlers

INTRODUCTION

Diarrhea is a disease that often occurs in toddlers both in the world and in Indonesia itself, WHO noted that diarrhea cases in infants in 2013 were 1.5 billion cases with a mortality rate of around 760,000 cases. Meanwhile, according to data from UNICEF and WHO in the same year, the death rate due to diarrhea around 2000 toddlers each year (Aprihatin *et al.*, 2020; Arlym *et al.*, 2020; Armaita *et al.*, 2020; Asman *et al.*, 2020) The consistency of stool is very important to note in cases of diarrhea in infants compared to its frequency. If the frequency of bowel movements increases but the consistency of solid stool, then it has not been called a case of diarrhea. Infants who are

still drinking exclusive breast milk often have feces that are somewhat runny, or like pasta but are not referred to as diarrhea. Parents usually know when their child has diarrhea and can be an important source of work diagnosis. Diarrhea often attacks children in the first years of life (Hermon, 2020; Indika *et al.*, 2020; Marni *et al.*, 2020; Oktorie and Bert, 2020). The incidence of diarrhea is usually highest in children under the age of 2 years, and will decrease with age. Toddler diarrhea is classified into two, namely acute diarrhea and problematic diarrhea. Acute diarrhea is diarrhea that is marked by defecation soft / liquid can even be in the form of water only, frequency is more frequent than usual (4 times more a day) and lasts less than 14 days.

Indonesia is a developing country and is vulnerable to cases of diarrhea, the main cause of death in infants, which is 25.2%, higher than pneumonia, 15.5% (Riskesdas, 2007). This is certainly a serious problem for Indonesia in order to achieve the fourth goal of the Millennium Development Goals (MDGs), which is to reduce infant mortality to 2/3 within a period of 25 years (1990-2015). Health Development is intended to increase awareness, willingness and ability to live healthy for everyone in 2025. The goal of health development is to increase awareness, willingness and ability to live healthy for everyone in order to realize optimal health degrees. The highest increase in the level of public health can be realized through the creation of the people, nation and state of Indonesia, which is characterized by its population living with behavior and in a healthy environment, having the ability to reach quality health services, fairly and evenly (MOH RI) The main cause of death due to diarrhea is improper management both at home and in health facilities including the occurrence of diarrheal diseases, among others, the low healthy lifestyle of the community, especially in the provision of good environmental sanitation facilities to support environmental health. To reduce deaths due to diarrhea need to be ordered like a fast and precise. knowledge (WHO, 2013). In addition, poor personal hygiene factors can cause diarrhea (Yanti *et al.*, 2020; Yuniarti *et al.*, 2020). Drinking water sources play an important role in people's lives that are used for drinking and hygiene needs, but the quality of water can also be a medium of disease transmission if the bacterial content in water $> 0/100$ ml. the prevalence of diarrhea shows that there is a slight difference between children who consume water with E. coli $<0/100$ ml.

AVAILABILITY AND ACCES TO SAFE WATER

Indonesia is one country that is rich in water resources where water is available 15,500 cubic meters per capita per year, far above the average availability of water in the world which is only 8,000 cubic meters per year. However, Indonesia is still experiencing clean water problems. Around 119 million Indonesians do not yet have access to clean water, most of whom have access to clean water from water suppliers, community water businesses and deep water wells. Data mentioned that in 2009 the proportion of the population with safe drinking water access was 47.63%. Sources of drinking water that are called proper include tap water, public taps, bore or pump wells, protected wells, protected springs and rain water. Health impacts of not meeting basic needs for clean water and sanitation include those seen in children as a vulnerable age group. WHO estimates that in 2005, as many as 1.6 million children under five (an average of 4500 each year) died from unsafe water and lack of hygiene.

Access to proper basic sanitation Ownership and use of defecation facilities is one of the important issues in determining the quality of sanitation. But in reality from the 2009 data, it shows that almost 49% of the Indonesian people do not have access to latrines. This means there is more out of 100 million Indonesians who defecate carelessly and use latrines that are not qualified. This figure is clearly a big factor that causes the high incidence of diarrhea, especially in infants and toddlers in Indonesia.

WASTE AND WASTE HANDLING

Estimated waste in 2010 in Indonesia reached 200,000 tons per day, which means 73 million tons per year. Because various things of waste management cannot be arranged properly which will cause a lot of disturbance both in terms of aesthetics in the form of piles and rubbish, environmental pollution of air, soil and water, the potential release of methane gas (CH₄) which contributing to global warming, silting rivers which lead to flooding and health problems such as diarrhea, cholera, typhus, skin diseases, intestinal worms, or poisoning due to consuming food (meat / fish / plants) contaminated with toxic substances from the waste.

DISEASE VECTOR AND COMMUNITY BEHAVIOR

Disease vectors are increasingly difficult to eradicate, this is because disease vectors have adapted in such a way to environmental conditions, so that their survival ability is even higher. This is supported by other factors that make vector breeding more rapid including: changes in the physical environment such as mining, industry and housing development; clean water supply system with pipelines that have not yet reached the entire population so that containers are still needed for water supply; inadequate settlement and urban drainage systems; waste management system that has not met the requirements, the use of pesticides that is not wise in vector control; global warming which increases air humidity by more than 60% and is an ideal condition and place of life for vector disease breeding.

Clean and Healthy Life Behavior has not been widely applied by the community, according to a Basic Human Services (BHS) study in Indonesia in 2006, community behavior in washing hands. This type of quantitative research is cross sectional design. The study population was all children under five (1-4 years). Conclusion Environmental Sanitation is associated with the incidence of diarrhea in SPAL toddlers. are (1) after defecating 12%, (2) after cleaning the stools of infants and toddlers 9%, (3) before eating 14%, (4) before feeding infants 7%, and (5) before preparing 6% food. Another BHS study of household drinking water management behavior shows 99.20% boiling water to get drinking water, but 47.50% of the water still contains eschericia coli. According to the 2006 Indonesia Sanitation Sector Development Program (ISSDP) study there were 47% people still behave defecate into rivers, rice fields, ponds, gardens and open spaces. There are several efforts that can be done to minimize the occurrence of environmental-based diseases, including: (1) Sanitation of Clean Water Sources (SAB), which can be done through water quality surveillance, sanitation inspection of clean water facilities, water quality inspection, and fostering water user groups. (2) Sanitation of Settlement Environment by monitoring family toilets (guard), sewerage (SPAL), and waste management (TPS), restructuring Public Places (TTU) including hotels and other lodging places, markets, swimming pools and other public baths, worship facilities, public transport facilities, beauty salons, bars and other entertainment venues. (3) Efforts are

made to foster hospital institutions and other health facilities, educational facilities, and offices. (4) Restructuring of Food Management Sites (TPM) which aims to carry out technical guidance and supervision over food and beverage sanitary facilities, preparedness and prevention of outbreaks of poisoning, early vigilance and foodborne illness.

CONCLUSION

Clean water facilities, toilet facilities, suggestions for rubbish bins related to the occurrence of diarrhea in children under five, cooperate with government agencies to motivate the community to establish clean water facilities, healthy latrines, and advice on bins that are in accordance with health standards. Public health experts generally agree that the quality of environmental health is one of the four factors that affect human health. According to HL Blum, some of the factors that make the greatest contribution to achieving health status are not always caused by environmental factors, but there are other factors that also considered as supporting the transmission media and exacerbating existing diseases. Individual sanitation, environmental sanitation, counseling and education or health promotion carried out persuasively for mothers of children under five need to be improved, so as to reduce the risk of diarrhea in toddlers.

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