

Conference Paper

The Spread of Dengue Hemorrhagic Fever in the Kolaka Regency, Southeast Sulawesi, Indonesia

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Dengue fever is one of the public health problems happening around the world, especially in tropical and subtropical countries. Dengue fever may cause death to children and adults, and it has become an endemic in some parts of Indonesia. This study used various data sources from the Indonesian Government. The dengue cases data was obtained from the Kolaka Regency Public Health Office in the period 2015-2020. The conclusion is that the dengue patients were mostly men, and this statistics decreases year by year. In the year of 2017 and 2019 the cases increased. Most patients are in the 17-29 years old age range.

Keywords: Dengue hemorrhagic fever, Kolaka Regency, Indonesia

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1. INTRODUCTION

Dengue Hemorrhagic Fever (DHF) is an arbovirus disease transmitted by *Aedes Aegypti* and *Ae. Albopictus*. The Global Burden of Disease research revealed that during the period 2000-2013, DHF is increase as the highest problems than other infectious diseases, which was 400%. [1] The disease spreads out to more than 100 countries, placing a huge burden on society and health care systems in tropical and sub-tropical regions. [2] It is estimated that there are 390 million dengue virus infections happens annually with 96 million severe cases worldwide. It was reported as increased sixfold from 2010 (<0.5 million) to 2016 (>3.34 million). Most of these cases were from three World Health Organization (WHO) regions, including Southeast Asia, the Western Pacific and the Americas. [3] Dengue has also been reported to be a health problem for the Indonesia people for the last 45 years. This disease has spread in 433 of 497 districts/cities in Indonesia.[4]

Southeast Sulawesi Province is one of DHF endemic province in Indonesia. [6] One of them is the Kolaka Regency where cases fluctuate year by year. In Kolaka Regency there was a decrease cases which is a 5-year cycle, it happen in the year 2015 as many

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as 761 cases to 753 cases in the year 2016, 243 cases in the year 2017, 213 cases in the year 2018 and in 2019. There was an increase to 250 cases and then decreased in 2020 to 60 cases. If the number of dengue cases in Kolaka is calculated, there has been a very significant decline. There was improving in the year 2019 and fairly low decline in the year 2020. This year DHF cases declined to 60 cases with an *Incidence Rate* of 22.4 per 100.000 population.

However, environmental conditions related to the existence of dengue vectors in Kolaka. The condition happen almost all areas in Kolaka Regency that may malaria transmission to occur. The causing factor of disease involves three aspects, namely the host, agent, and environment. The host in this case is humans who are sensitive to dengue virus infection. The causative agent of DHF is dengue virus from the genus *Flavivirus* (*Arbovirus Group B*) one of the Genus *FamiliaTogaviradae*. Geographical location, season, and environment are affects the incidence of dengue disease.

There are 12 sub-districts in Kolaka Regency and the most DHF sufferers is Kolaka sub-district. The total cases of DHF in Kolaka Regency by now show the death rate due to dengue cases is zero or not yet. Preventive strategy has been done by the Kolaka Health Office to decline the spread of DHF such as abatesasai or sprinkling abate powder in water reservoirs, eradicating mosquito nests and carrying out draining, closing, and burying (3M Plus) movements. Fogging the areas where dengue patients are found has been done

2. METHODOLOGY

Kolaka Regency is located in the Southeast of Sulawesi Island which includes land and islands. SE Sulawesi has a land area of 3,283.64 km² and an estimated water/sea area of ±15,000 km². Kolaka Regency is the capital city of Kolaka+170 km south of Kendari City. It is located between 02°00' and 05°00' South Latitude (SL) and 120°45' and 124°06' East Longitude (EL)

This study used various data from the Indonesian government. Case data from DHF was obtained from the Kolaka Health Office from 2015-2020. Data were taken from the annual health fact sheet published by the Kolaka District Health Office. The result of the study is presented as follow:

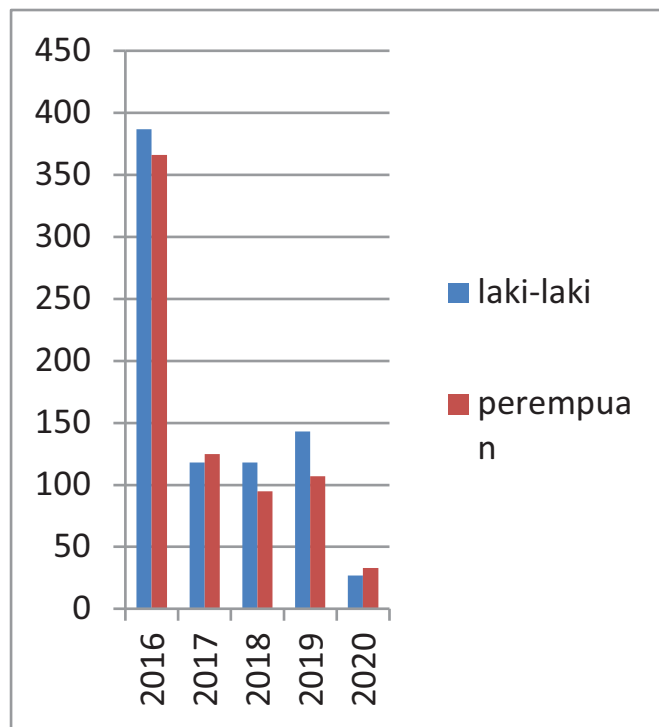


Figure 1: Number of DHF cases by gender in Kolaka Regency.

3. RESULT OF THE STUDY

The results showed that in year of 2016-2020 the distribution of DHF patients was more happen to men. In the year 2017 and 2020 DHF cases occurred in women. However, the frequency of sufferers from year by year is continuously to decline. It showed that the success of the government to overcome DHF in Kolaka Regency.

Based on the distribution of the incidence of DHF from year to year, the results of research show that DHF always fluctuate from year to year. In 2016 DHF cases tended to be high but in the following years, namely 2017 and 2018, it decreased significantly. The cases increase in the year 2019 but there was decline in 2020.

According to the Kolaka Regency data in 2016, 2019 and 2020 the highest DHF cases was in Kolaka District. In the year 2017 and 2018 the highest number was in Watubangga Regency.

4. DISCUSSION

The number of dengue cases in Kolaka is dominantly by male than the female. It is because Kolaka district's main livelihood is as a farmer. The male population group cultivates agricultural land. This condition cause them to get bitten by mosquitoes. Population

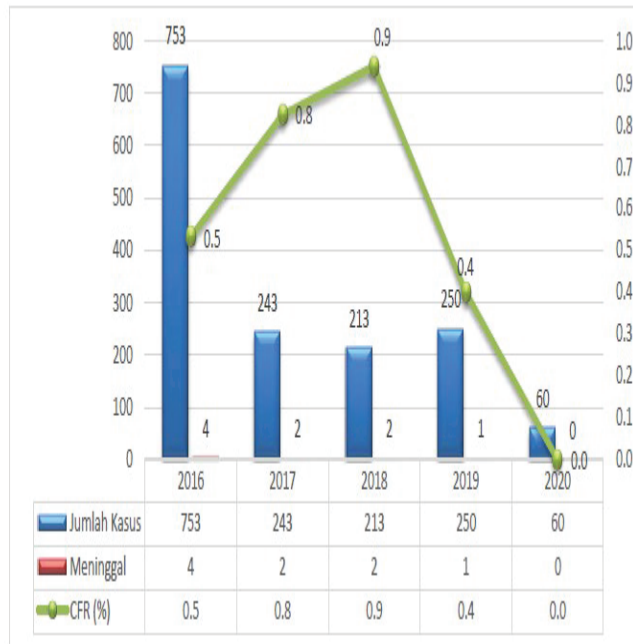


Figure 2: Number of DHF Cases per Year in Kolaka Regency.

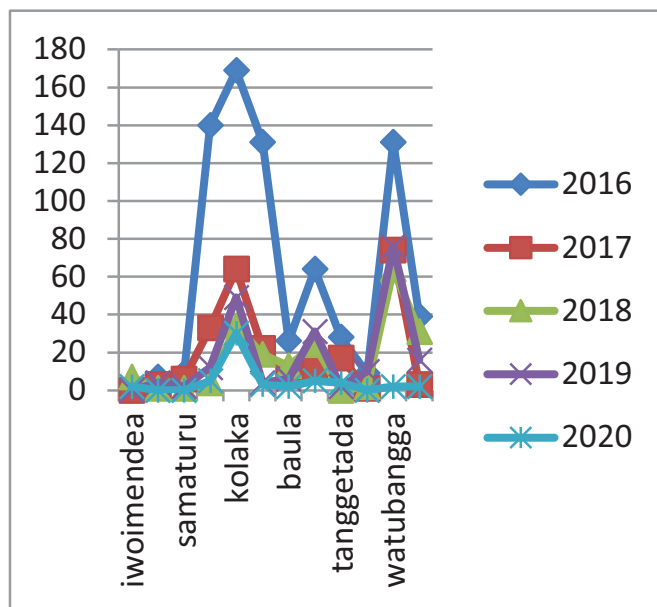


Figure 3: Number of DHF Cases by District in Kolaka Regency.

density in Kolaka Regency contributes to the DHF cases where from year by year the population increases. In addition, the geographical location cause dengue cases because most of Kolaka Regency is water (sea). The majority of those affected are people whom productive age, especially in the 17-29 year old.

5. CONCLUSION

The majority of DHF cases in Kolaka Regency are men that tend to decrease year by year. In the 2017 and 2019 there was an increase but not to be as same high as the previous year. The majority of DHF patients in Kolaka Regency are in the productive age namely 17-29 years old.

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