

ENVIRONMENTAL BASED DENGUE FEVER PREVENTION MODEL

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ABSTRACT

Dengue Hemorrhagic Fever or better known as Dengue Hemorrhagic Fever (DHF). This DHF vector is the *Aedes aegypti* mosquito through repeated bites of susceptible people. Efforts that are often made to prevent the spread of DHF through the eradication of mosquito nests (PSN) and case-control have not been running optimally because the eradication of dengue disease does not only eradicate *Aedes aegypti* mosquitoes but also eradicate the dengue virus carried by these mosquitoes. Thus the emphasis on eradication is also directed at reducing the number of mosquitoes that can carry the dengue virus in a way, which is often done by killing the larvae. Meanwhile, removing larvae is commonly used by implementing 3M Plus and this has received less attention from the community because it is considered an effort with unclear results compared to smoking. The research to be carried out is categorized as mixed methods between qualitative and quantitative research. Mixed methods are a combination of qualitative and quantitative methods to become a synergistic force, can produce two different views, open interdisciplinary job opportunities, demonstrate methodological skills, and build intuitive knowledge-seeking work. The research location is in Padang Pariman Regency and several Nagari were selected as research areas. The data used are secondary data and primary data.

Keyword: dengue, prevention, environmental

INTRODUCTION

We often hear that one of the problems of preventing and eradicating infectious diseases which is still a public health problem is Dengue Haemorrhagic Fever or better known as Dengue Hemorrhagic Fever (DHF) [1]. This DHF vector is the *Aedes aegypti* mosquito through repeated bites of susceptible people. We have known since a long time ago in Indonesia in 1968 that the spread of dengue fever is increasingly widespread throughout Indonesia and several areas where cases are always found every year as endemic areas [2, 3].

Prevention of the spread of dengue is simple and does not require high technology as in the case of SARS which requires laboratory examination in Atlanta. Meanwhile, eradicating DHF requires clear and simple steps by fostering changes in attitudes and awareness of all parties and society in maintaining a clean environment [4]. With a large population, the Indonesian people should be able to become a force of assistance and work together in cleaning the environment and should not forget to implement 3M Plus in their respective homes. In 156 second-level regions (in 23 provinces) with 15,340 sufferers, 549 (3.6%) of them died. Although the DHF mortality rate tends to decrease, from 41.3% (1968) to 3.6% (1988), the spread is getting wider. Until 2002, all

provinces had reported DHF cases. During the 36 years since the discovery of dengue cases until March 2004, 12 provinces have been declared areas of extraordinary incidence (KLB). This situation is closely related to the increased mobility of the population and the smoother transportation links [5].

Many factors must be considered in an integrated and synergistic manner in environmental-based prevention against the spread of Dengue Hemorrhagic Fever in the DKI Jakarta province, including natural resources, artificial resources, the environment, and supporting components for successful prevention. Even natural resources and man-made resources as well as other living environments also have many derivative components.

METHODS

The research that will be carried out includes the category of mixed methods research between qualitative and quantitative research. The research location is in Padang Pariman Regency and several Nagari were selected as research areas. The data used are secondary data and primary data. Secondary data collection was carried out by survey, and visiting related agencies. Data secondary data includes statistical data, vector data, dengue disease, research results, the potential use of mosquito repellent vegetation, and other processed data. Primary data collection is carried out through interviews with experts and the public.

RESULTS

Dengue is a dangerous infectious disease that can cause death in a short time and often causes outbreaks [6]. The disease was first discovered in 1801 in Spain, but the term dengue first became popular with the epidemic in Cuba in 1828. Dengue viruses include RNA viruses, the Arthropod-Borne Virus (Arbovirus) group, genus Flavivirus family Flaviviridae, stem shape, measuring 50 nm, is thermolabile, stable at storage temperatures -70°C .

The *Aedes aegypti* mosquito becomes infective after biting a human who is sick or in a state of viremia (the time when the virus replicates rapidly in the human body, namely: two days before fever to five days after fever) [7]. DHF sufferers often show symptoms of cough, runny nose, vomiting, nausea, and even diarrhea. For this reason, sharp clinical observations based on laboratory analysis are needed. Symptomatic dengue virus infection may be a syndrome of DD, DHF, or DSS disease.

The incubation period is 4 - 6 days for various atypical prodrome symptoms, such as headache, back pain, and malaise. Typical clinical symptoms in adult DD patients occur suddenly, temperature increases with chills followed by headache and flushed face. Within 24 hours there will be pain behind the eye or pressure in the eyeball, photophobia, back pain, and muscle and joint pain. Other symptoms are no appetite, disturbances in the sense of taste, constipation, abdominal pain, pain in the groin area, sore throat, and feelings of depression, which last for several days [8]. The degree of DHF can be grouped into four degrees [9]:

1. Grade I: Fever accompanied by atypical clinical symptoms, the only symptom of bleeding is a positive tourniquet test.
2. Grade II: Symptoms that arise in grade I DHF are added to the occurrence of spontaneous bleeding.
3. Grade III: Circulatory failure characterized by rapid and weak pulse, narrowed pulse pressure (20 mmHg or less), or hypotension, characterized by cold and moist skin and restless patients.
4. Grade IV: severe shock, pulse, and blood pressure not palpable.

CONCLUSIONS

The prevention of dengue disease is based on the principle of breaking the chain of transmission because until now there has been no effective vaccine against the dengue virus there are five possible ways to break the chain of transmission, namely: 1) Destroying mosquitoes' habitat; 2) Providing anti-viral drugs, but anti-dengue virus drugs have not been found; 3) Isolating sufferers; 4) Eradicating vectors (fumigation); 5) Preventing mosquito bites; and 6) Providing immunization, but the vaccine against dengue virus is still at the research stage in Bangkok. Eradication of adult mosquitoes using chemicals (thermal fogging) is still considered an important strategy to eradicate mosquitoes, but has little impact on long-term dengue eradication efforts forgoing is done if at least three sufferers of fever without cause and high larva density are found.

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