CLIMATE AND SOCIO GEOGRAPHICAL BASED EARLY DETECTION MODEL OF DENGUE FEVER IN SOUTH SULAWESI PROVINCE

Ashari Rasjid
Environmental Health Department, Health Polytechnic of Makassar
Corresponding author: asharirasjid63@gmail.com

ABSTRACT

Dengue fever is one of the public health problems in Indonesia. It tends to increase in the number of patients yearly. Dengue Haemorrhagic Fever (DHF) caused by dengue virus is transmitted by Aedes species mosquitos particularly by Aedes aegypti and Aedes albopictus. In South Sulawesi, based on SubDin P2 & PL 2010 reports, DHF incidence in 26 districts/cities accounted for 2.636 cases. Incidence Rate (IR) of Dengue Haemorrhagic Fever reported 49/100.000 population with Case Fatality Rate (CFR) 0.8%. Dengue transmission is influenced strongly by climate factors such as region, altitude, vector distribution, the transovarial transmission of dengue virus, mobility, number of population, density and community behavior in preventing and overcoming DHF. The design used in this study is an inferential cross-sectional. This research is conducted in South Sulawesi Province with 3 regions that have to vary in height. Those are Makassar city as a lowland, Maros Regency as a medium plateau, and Tana Toraja Regency as a plateau. This research result shows data in Makassar, the Humidity influence the number of DHF case with Coefficient Beta value 0.639 and the p-value 0.003 ($p < 0.05$). Rainfall affects the number of dengue cases with Coefficient Beta value -0.503 and p-value 0.011 ($p < 0.05$). In Maros Regency, the mobility variable has an effect on the number of DHF incidence with Coefficient Beta value -0.942 and p-value 0.000 ($p < 0.05$). In Tana Toraja regency, air temperature variable with Coefficient Beta value 0.977 and p-value 0,000 ($p < 0.05$), humidity variable with Coefficient Beta value 1.855 and p-value 0.000 ($p < 0.05$), and duration of solar radiation with Coefficient Beta value 1.149 and p-value 0.000 ($p < 0.05$) have an effect to the number of dengue cases. Thus, the recommendation of early awareness of DHF should be focused on factors that contribute significantly to the high-risk potential in each region. Risk prevention measures directed to manage the situation of such important factor changes such as increased rainfall must be followed by an increase in water puddle reduction measures that can become a breeding container for Aedes aegypti mosquitoes.

Keywords: DHF, climate, socio-geography, vector distribution, Transovarial transmission, early awareness