

UNIVERSITI TEKNOLOGI MARA

**SPATIAL AND TEMPORAL PATTERN
DISTRIBUTION OF DENGUE CASES IN A
LOCALITY NEARBY MRT LINE KUALA
LUMPUR : (A Retrospective Study from 2015-
2019)**

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ABSTRACT

Malaysia, with a population of approximately 27.7 million and a population density of 84 per sq. km, has continuously recorded rising annual cases of dengue infection since 1980. The pattern of dengue transmission is influenced by complex factors including the environment, climate and weather, human behaviour and dengue virus serotype-specific herd immunity among the human population. The condition of Malaysia itself as tropical climate country provides conducive sites for *Aedes* mosquitoes to breed and eventually facilitate the distribution of dengue viruses into the population. Data of confirmed dengue cases were collected from 2015 to 2019 in 500 metre radius and 1000 metre radius from twelve MRT stations studied in Kuala Lumpur. The data was analyse to study the the temporal distribution of dengue cases nearby MRT stations. The dengue cases reported were highly influenced by the density of the population lived nearby locality. This result thought to be helpful and relevant to leaders to stay away from this sort of difficult issue by considering proper control measures. This goes about as a notice that the community should not take with this expansion, as the dengue illness shows a higher contamination and transmission rate contrasted with the other comunicable disease in Malaysia.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

Dengue fever (DENF), chikungunya (CHIK), and Zika are three vector-borne diseases (VBDs) transmitted by the *Aedes aegypti* and *Ae. albopictus* mosquitos (*Harrington et al., 2001; Chouin-Carneiro et al., 2016*). In general, VBDs are responsible for approximately 1 billion infections and 1 million deaths per year globally (World Health Organization, 2014). Dengue was established in Malaysia with its first reported cases of DF and DHF in 1900s and 1970, respectively (*Cheong., et all, 2013*).

Malaysia, with a population of approximately 27.7 million and a population density of 84 per sq. km, has continuously recorded rising annual cases of dengue infection since 1980. Major, national dengue outbreaks were reported in 1974, 1978, 1982 and 1990, exhibiting a 4-year cycle [9]. According to the 2008 Health Facts by Malaysian Ministry of Health, the incidence rate of dengue was 167.76 per 100 000 population with a mortality rate of 0.02 [10]. In the process of becoming a developed nation, massive infrastructure development in this country has contributed towards a high incidence of dengue infection, as urbanization is a favourable factor for *Ae. aegypti* breeding and subsequently facilitates the spread of DENV [11-13].

The pattern of dengue transmission is influenced by complex factors including the environment, climate and weather, human behaviour and dengue virus serotype-specific herd immunity among the human population. The condition of Malaysia itself as tropical climate country provides conducive sites for *Aedes* mosquitoes to breed and eventually facilitate the distribution of dengue viruses into the population. Aside from that, construction sites, factories and schools in developing areas, industrial and